



## ENGINEERING AND INSTALLATION STANDARD

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Supersedes AIAH 33-102, 5 March 1999.  
OPR 668 LS/ILES (Mr. Jimmie Davis)

Certified by 690 IOG/CC (Col Gilly A. Marshall)  
Pages: 165/Distribution: F

This Engineering and Installation Standard (EIS) standardizes installation practices necessary to install equipment and systems in HQ Air Intelligence Agency facilities. For technical information and installation procedures, see the appropriate section in the EIS. Applicable guidance was extracted from Air Force 31 series Technical Orders, the National Electrical Code and Commercial Publications; use these references and good engineering practices when specific details are not contained herein. The use of brand or trademark names in this publication are incidental and do not imply endorsement by any government agency. To make suggestions for corrections or improvements to this document send comments to:

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Comments should include, but not be limited to, drawing number, drawing date, EIS page number, narrative description of suggestion and references for suggested change. Include as much information as possible to make the suggestion understandable.

### *Summary of Revisions*

Added references for TEMPEST requirements and updated drawings listed below.

### **Updated drawings:**

A024-1, -F325-2, -F325-3, -F325-5, -F331-1, -F331-2, -F333-1, -G289-1, -M228-1, -P018-1, -P018-2, -P328-1, -P332-1, -P342-2 -P342-5

**1. General Information.** Electrical technical power and interposition cable distribution at AIA facilities are either suspended overhead or routed under raised flooring. Installation scheme specifies methods and materials. There are National Electrical Code requirements for wiring and cabling methods in ducts, plenums, and other environmental air-handling spaces. When overhead, cable troughs are supported by hangers attached to a steel channel grid secured to the ceiling. Electrical bus ways are attached below the cable trough. When inter-position cabling and electrical power (enclosed in flexible conduit) under raised flooring, lay on the sub-floor, cabinets are grounded either to a ground bus routed through the overhead trough or attached to a steel channel grid below the raised floor. Cabinets are anchored either with studs secured to a hard floor or through a raised floor to the anchoring grid and secured to the sub-floor.

**2. Signal Cable Installation.** Interposition cable is laid directly on the sub-floor. If routing is not specified in the installation scheme lay cables either in line or at right angles to cabinet rows. Maintain separation from power runs and cross at right angles when possible. Pull in enough slack to allow for forming and wiring. Orderly routing and a good appearance should be maintained throughout. Excess cable will be eliminated and not left in coils beneath the raised flooring. This is consistent with good engineering practices. Entry openings in raised floors or plenums will be air sealed using firestop putty or other material to prevent air from escaping.

**3. Flex conduit Installation.** Fused panels and ducts extending beneath a raised floor for technical power are normally contractor or unit responsibilities. Power cabling is enclosed in flexible steel conduit from power panels to individual equipment cabinets. Conduit runs, which exceed 100 feet, must have pull boxes. If routing is not specified in an installation scheme lay conduit in line or at right angles to cabinet rows. Maintain separation from signal runs and cross at right angles when possible. Raised floor entry holes are sealed using firestop putty after installation. To reduce possible source of ignition below the raised floor, power receptacles and connectors are installed above the raised floor or in surface mounted access modules. Only equipment that is used for the sensing may have electrical power applied to them below the raised floor.

**4. Yellow Equipment Ground Wire.** Only use yellow equipment ground wire when there are two separate grounding systems to reduce noise; one for the low frequencies system (Yellow Wire) and one for the high frequencies system (Green Wire). There must be no continuity between the systems except at the Grounding Electrode or Plate. For the Low Frequency System, ac protective ground must not be connected to the power panel, the cabinets must be electrically insulated from other devices. Refer to T. O. 31-10-24, Chapter 9, for more information.

**5. TEMPEST References.** Air Intelligence Agency Instruction (AIAI) 33-203, *The AIA TEMPEST/EMSEC Security Program*, must be complied with when installations are within a SCIF. Air Force Systems Security Memorandum (AFSSM) 7011, *Emission Security Countermeasures Reviews*, provides guidance for non-SCI Facilities.

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CHARLES G. CRAWFORD, Colonel, USAF  
Director of Logistics

Attachment 1

Engineering and Installation Standard Drawings

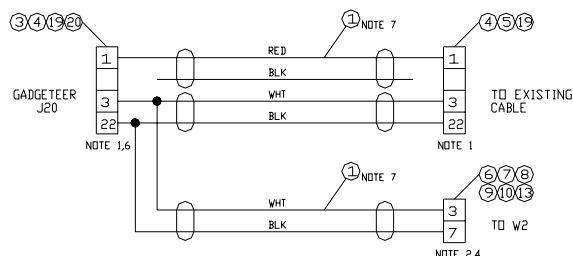


FIG. 1, CABLE W1

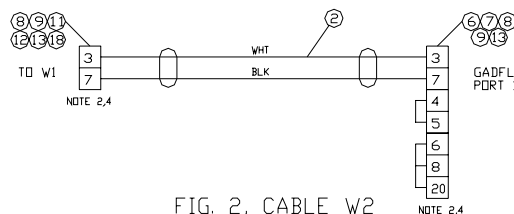


FIG. 2, CABLE W2

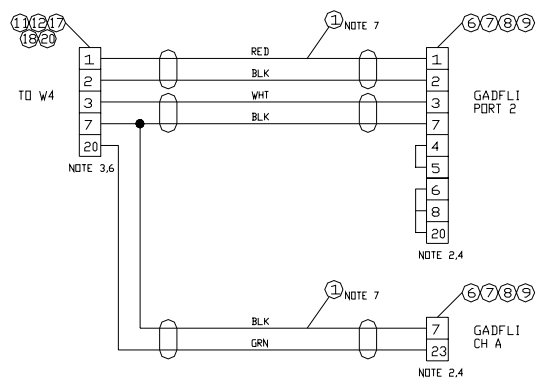


FIG. 3, CABLE W3

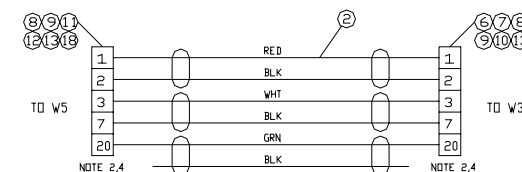


FIG. 4, CABLE W4

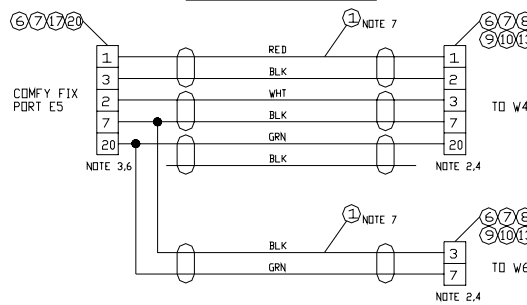


FIG. 5, CABLE W5

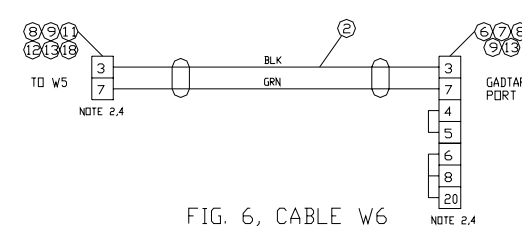


FIG. 6, CABLE W6

## NOTES:

1. MAKE WIRE SPLICES INSIDE OF BACKSHELL BY CRIMPING THE TWO WIRES INTO ONE PIN. IF UNABLE TO, USE SOLDER METHOD AND COVER WITH HEAT SHRINK. CONNECT ALL SHIELDS AND UNUSED WIRES TO BACKSHELL USING FIND NO.'S 19 & 21.
2. CRIMP ALL SHIELDS AND UNUSED WIRE BETWEEN FERRULES.
3. MAKE WIRE SPLICES INSIDE OF BACKSHELL BY CRIMPING THE TWO WIRES INTO ONE PIN. IF UNABLE TO, USE SOLDER METHOD AND COVER WITH HEAT SHRINK. FOLD BACK SHIELDS AND UNUSED WIRES TO MAKE CONTACT WITH BACKSHELL GROOVES.
4. USE CRIMPER DIE ASSEMBLY P/N 543013-3 (DIE MARK C1).
5. FIND #16 WILL BE CUT INTO 10 INCH LENGTHS. CUT OFF SHIELDS AND UNUSED WIRES AND COVER WITH HEAT SHRINK (FIND #23).
6. W1, W3, & W5 ARE 2 CABLES INTO ONE CONNECTOR.
7. FIND #1 WILL BE CUT INTO 1 FOOT LENGTHS.

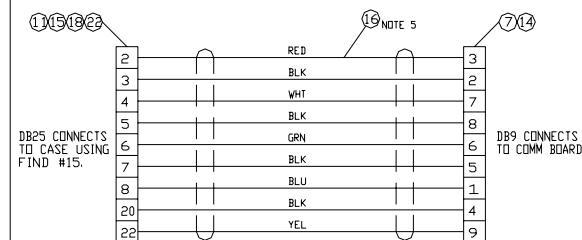
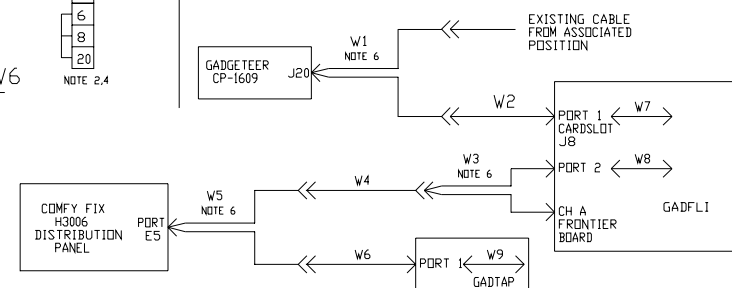


FIG. 7, CABLES W7, W8, W9



## LEGEND

→ CABLE WITH CONNECTOR

FIG. 8, SIGNAL FLOW

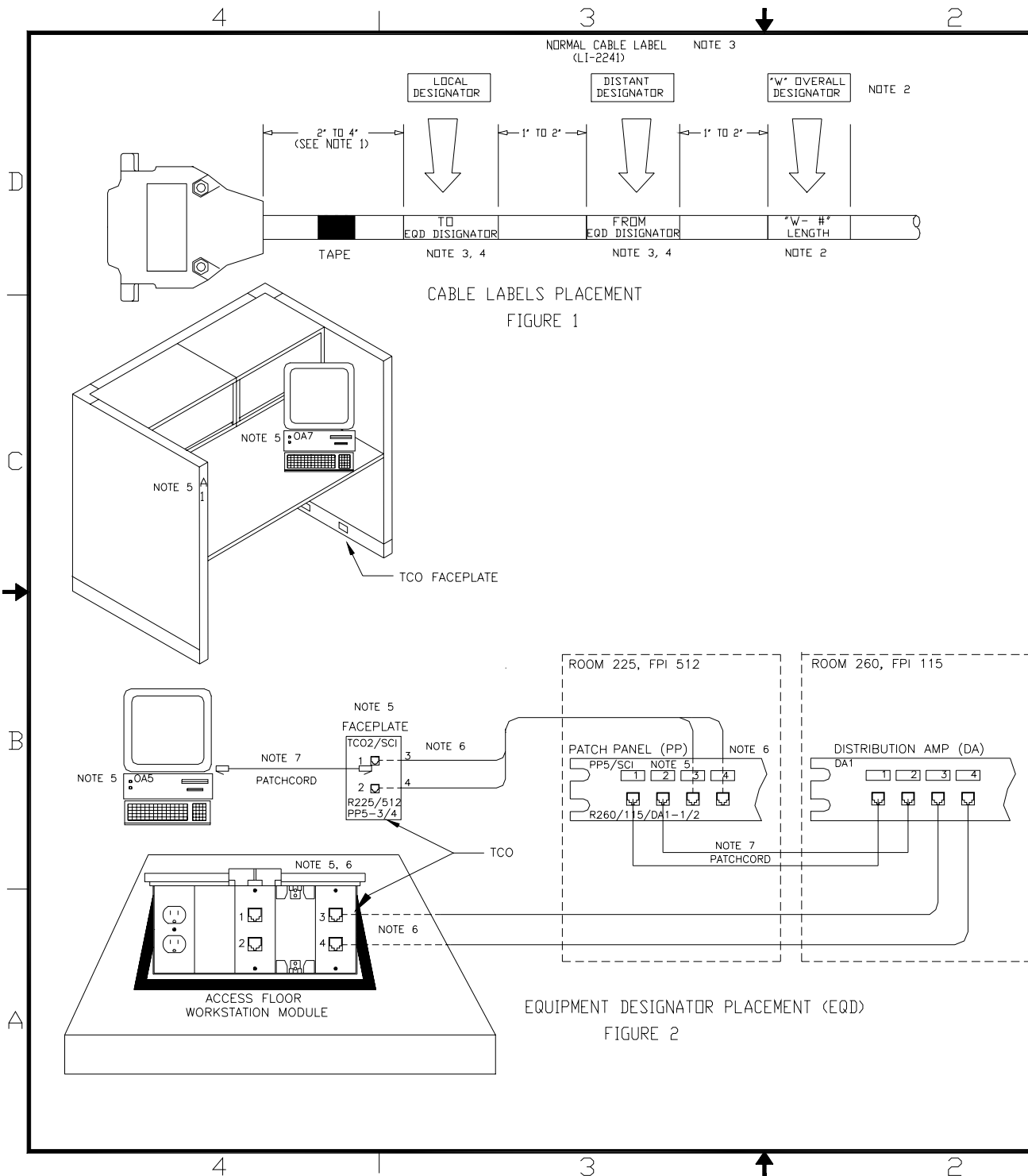
## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	0811	BELDEN CABLE P/N 88777 (NOTE7)	6 FT
2.	0811	BELDEN CABLE P/N 88777	AS REQ
3.	0181	CONN. MS27467113F-35S	1 EA
4.	6412	BACKSHELL MS5049/2912W04	2 EA
5.	0976	CONN. 418-177113F-35P	1 EA
6.	0833	RECEPTACLE DB25S 205207-1	8 EA
7.	6875	CONTACT SOCKET MS39029/63-368	53 EA
8.	0978	INNER FERRULE 2-745129-1 (FOR 25 PIN)	10 EA
9.	0979	OUTER FERRULE 745130-8	11 EA
10.	0980	LOCKING POST 747242-1	8 EA
11.	6880	PLUG DB25P M24308/4-261	7 EA
12.	0947	DB25 LATCH SLIDE 745584-1	4 EA

13.	6865	RFI BACKSHELL 745173-3 (FOR 25 PIN)	9 EA
14.	0982	RECEPTACLE DB9S 205203-1	3 EA
15.	0859	SCREWLOCK 205817-1	6 EA
16.	5115	CABLE	3 FT
17.	0057	RFI BACKSHELL	2 EA
18.	6874	CONTACT PIN M39029164-369	23 EA
19.	1324	TERMINAL LUG	2 EA
20.	0416	HEAT SHRINK	5 EA
21.	0612	WIRE, 22 GAUGE, 7 STRANDED BLACK	2 FT
22.	0994	RFI FILTER	3 EA
23.	0572	HEAT SHRINK, 1/2 INCH	1 FT
24.	2241	WRITE ON LABEL	2 SH

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN J. W. Lacy		TITLE GADFLI	
CHECKER D. J. Moore		Interconnection Diagram Wiring Diagram & Signal Flow	
ENGINEER J. W. Lacy		SIZE C	DATE ESTABLISHED 31 OCT 90
APPROVED D. Duff		DRAWING NUMBER 99-01-021	
DRAWING CONTROL # 021		SCALE Full	DATE 30 DEC 96
		SHEET ...1... OF ...1...	



0A96-013 ADD NOTES FOR "W" DESIGNATOR LABELS AND LABEL INFORMATION ON CABLES ON SECURITY HILL 15 JAN 97 TMH  
 QA 98-001 REVISED LABELING REQUIREMENT FIGURE 1 10 MAR 98 JD  
 QA 98-008 ADDED FIGURE 2 10 MAR 98 JD  
 IE 99-001 CHANGE NOTE 1. D. TO BOTH ENDS 10 DEC 99 JD

## NOTES:

1. CABLE LABELING METHOD IS IN ACCORDANCE WITH T.O. 31-10-13. CABLE LABELS ARE LISTED IN FIGURE 1-4. GENERIC OR FABRICATED CABLES MUST BE MARKED WITH INFORMATION SHOWN ON WIRELISTS, COUNT SHEETS, OR WIRING DIAGRAM. LABELS WILL BE PLACED ON BOTH ENDS OF THE CABLE. DO NOT RE-LABEL CABLES SUPPLIED WITH A SYSTEM FOR SPECIFIC USE. LABELING WILL APPLY TO ALL CABLES TYPES AND FUNCTIONS EXCEPT ANTENNA CABLES AS DETAILED IN DRAWING 99-02-054:

A) TWO INCHES FOR CABLES LESS THAN EIGHTEEN INCHES.  
 B) THREE INCHES FROM CABLE END IF NO CONNECTOR ATTACHED.  
 C) FOUR INCHES FOR CABLES GREATER THAN EIGHTEEN INCHES.  
 D) TAPE WILL BE PLACED AT BOTH ENDS OF THE CABLE TO INDICATE CLASSIFICATION: YELLOW=SCI, RED=COLLATERAL, AND BLACK=UNCLASSIFIED.

2. THE "W" DESIGNATOR IS THE OVERALL CABLE COUNT SHEET OR WIRELIST NUMBER ASSIGNED TO THE CABLE. WHEN "W" DESIGNATORS ARE ASSIGNED, PLACE THE LABEL 1 TO 2 INCHES AFTER THE DISTANT DESIGNATOR.

3. EQUIPMENT DESIGNATOR (EQD) IDENTIFY THE TERMINATION POINT OF THE CABLE AS SHOWN ON WIRELISTS, COUNT SHEETS, OR WIRING DIAGRAMS. THE LABEL WILL INCLUDE THE CLASSIFICATION OF DATA: (SCI)=SENSITIVE COMPARTMENTAL INFORMATION, (TS)=TOP SECRET, (S)=SECRET, (C)=CONFIDENTIAL, AND (U)=UNCLASSIFIED.

4. THE EQD FORMAT FOR THE SECURITY HILL COMPLEX C4 DOCUMENTATION:  
 ANNOTATE LOCAL AND DISTANT DESIGNATORS WITH ROOM NO. / EQUIPMENT DESIGNATOR - SLOT - PORT / TYPE CABLE AND SYSTEM.

A) EXAMPLE: SEE LIST OF EQUIPMENT IDENTIFIERS AND CABLE TYPES.

244/2032/C-1-17-4/2 DA LAN (SCI)  
 "244" = ROOM 244; RACK 2032; "C-1" = CONCENTRATOR #1;  
 "17-4" = SLOT 17 PORT 4; "2" = COAX CABLE;  
 "DA LAN" = SYSTEM NAME; "SCI" = CLASSIFICATION.

B) EQUIPMENT DESIGNATORS AND CABLE TYPES:

1) EQUIPMENT IDENTIFIERS

C = CONCENTRATOR  
 D = DROP  
 F = FIREWALL  
 H = HUB (TO INCLUDE DEMPR)  
 P = PATCH PANEL  
 S = SWITCH  
 R = REPEATER  
 RR = ROUTER

2) CABLE TYPES

1 = FIBER OPTICS  
 2 = COAX  
 3 = TWISTED PAIR

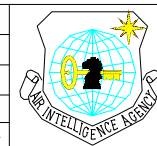
5. EQUIPMENT AND TELECOMMUNICATION OUTLETS (TCO) CONNECTED TO POWER OR SIGNAL CABLES MUST BE ASSIGNED AN EQD. RACKS SHELVES AND MODULAR FURNITURE MUST BE ASSIGNED A FPI. ANNOTATE THE EQD AND CLASSIFICATION IN THE UPPER LEFT FRONT OR TOP OF THE DEVICE.

6. IF CABLE LABELS ARE NOT VISIBLE, THE DISTANT END ROOM NUMBER, RACK NUMBER, EOD AND PORT NUMBER WILL BE ANNOTATE AT LOWER LEFT CORNER OF THE DEVICE OR ON A PLACARD WHICH MUST BE POSTED NEAR THE DEVICE.

7. PATCH CORDS THAT ARE VISIBLE AND LESS THAN 10 FEET IN LENGTH DO NOT REQUIRE CABLE LABELS.

# U.S. AIR FORCE AIR INTELLIGENCE AGENCY

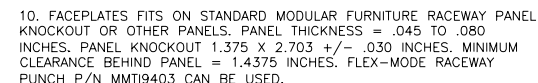
DRAFTSMAN  
J. Davis  
 CHECKER  
P. M. Spolenka  
 ENGINEER  
J. Davis  
 APPROVED  
J. Davis  
 DRAWING CONTROL # 024




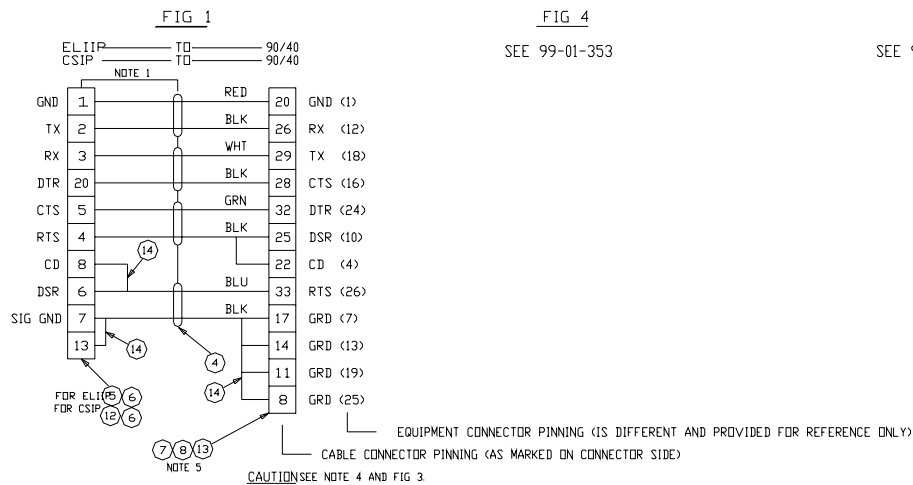
TITLE Cable Labeling and Equipment Designator

SIZE DATE ESTABLISHED DRAWING NUMBER  
C 15 Jan 97 99-01-024

SCALE DATE SHEET 1 OF 1  
Full 10 Dec 99



<p align="center"><b>U.S. AIR FORCE</b> <b>AIR INTELLIGENCE AGENCY</b></p>		<p align="center"><b>TITLE</b> <b>CATEGORY 5</b> <b>EIA/TIA 568A &amp; B</b></p>	
<p><b>DRAFTSMAN</b> T. Headley</p> <p><b>CHECKER</b> P. Spalenko</p> <p><b>ENGINEER</b> J. Davis</p> <p><b>APPROVER</b> J. Davis</p>		<p><b>SIZE</b> C</p> <p><b>DATE ESTABLISHED</b> 14 MAR 97</p> <p><b>SCALE</b> Full</p>	<p><b>DRAWING NUMBER</b> 99-01-029</p> <p><b>DATE</b> 11 DEC 98</p> <p><b>SHEET</b> 1 <b>OF</b> 1</p>
<p><b>DRAWING CONTROL</b> # 029</p>			



**FIG 4**

SEE 99-01-353

**FIG 7**

SEE 99-01-355

CONNECTED SHIELDS TO BOTH ENDS.  
DELETED NOTES 8 & 9. ADD NOTE 6.  
CHANGED RML FOR PLENUM CABLE, CHANGED  
NOTE 3. REMOVED DELETED NOTES.  
MOVED FROM CATEGORY 14, CHANGED NAME, AND  
CORRECTED RML.

4 MAY 92 CCS  
2 JAN 97 TMH

#### NOTES:

1. UNUSED WIRES AND SHIELD ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL FOR GROUNDING.
2. ALL JUMPERS WILL BE MADE AT THIS END OF THE CABLE. TWIST AND SOLDER WIRES AND COVER WITH HEAT SHRINK. DO NOT CONNECT TO IDF.
3. THE BLACK WIRE OF THE RED/BLK, WHT/BLK, AND BLU/BLK PAIRS IS CONNECTED TO PIN 7 AT BOTH ENDS. ALL UNUSED WIRES AND SHIELDS WILL BE CONNECTED TO BACKSHELL AT BOTH ENDS.
4. SEE FIG. 3 FOR CONNECTOR PIN NUMBERING. THE NUMBERS CIRCLED ARE THE PINS TO BE CONNECTED. INSERT ALL UNUSED PINS TO HELP HOLD CONNECTOR IN PLACE, BUT DO NOT CONNECT WIRES.
5. MAKE A SHARP 90 DEGREE BEND IN THE CABLE AT THE TY-WRAP HOLDER SO THE CABLE WILL GO STRAIGHT DOWN TOWARD THE FLOOR.
6. FOLD BACK SHIELDS AND UNUSED WIRES TO MAKE CONTACT WITH BACKSHELL GROOVES.

**FIG 2**

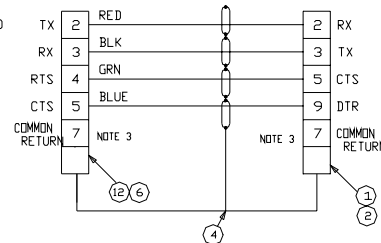
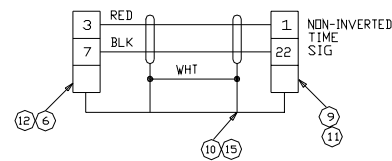
SEE 99-01-000354

**FIG 5**

NSP TO WOLFER

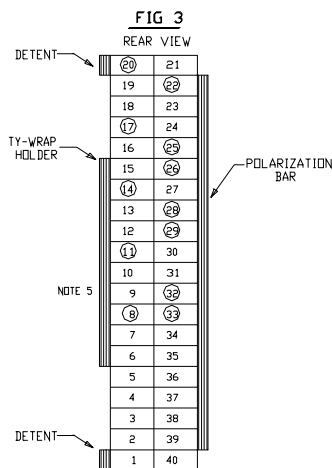
**FIG 8**

SWIP TO PARSEC



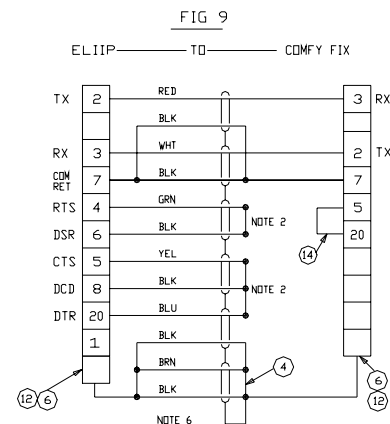
#### REQUIRED MATERIAL LIST

FIND NO.	DESCRIPTION	LI NO.	QTY
1	CONNECTOR MS27484T10F-35S	1038	A/R
2	BACKSHELL M38999/6-10B05	199	A/R
3	CABLE CLAMP	1042	A/R
4	BELDEN CABLE, PN 88778	197	A/R
5	CONNECTOR DB25P	1064	A/R
6	BACKSHELL RFI	57	A/R
7	TY-RAP	156	A/R
8	CONNECTOR 1-87733-1	188	A/R
9	CONNECTOR MS27467 T13-35S	181	A/R
10	BELDEN CABLE, PN 83553	195	A/R
11	BACKSHELL M38999/6-12B05	6412	A/R
12	CONNECTOR DB25S	2016	A/R
13	ELECTRICAL CONTACT, P/N 86016-1	1043	A/R
14	WIRE, 22 AWG, BLK	7647	A/R
15	STRAP, TIE DOWN	805	A/R



**FIG 6**

SEE 99-01-357



#### U.S. AIR FORCE AIR INTELLIGENCE AGENCY

DRAFTSMAN  
Porter  
CHECKER  
T. E. Moorman  
ENGINEER  
R. S. Galus  
APPROVED  
D. Duff  
DRAWING CONTROL • 057



TITLE  
Systems Interface  
ELLIP/FIX  
SIZE  
C  
DATE ESTABLISHED  
30 MAY 87  
DRAWING NUMBER  
99-01-057  
SCALE  
Full  
DATE  
2 JAN 97  
SHEET  
1 OF 1

A069-1

REVISED ALL FIGS.  
REVISED RML FORMAT.  
CHANGED NOTE 5, ADDED  
NOTES 7 AND 8 AND FIND  
NO. 7.  
MOVED FROM CATEGORY 14.

20 APR 92  
2 JAN 97

CCS  
TMH

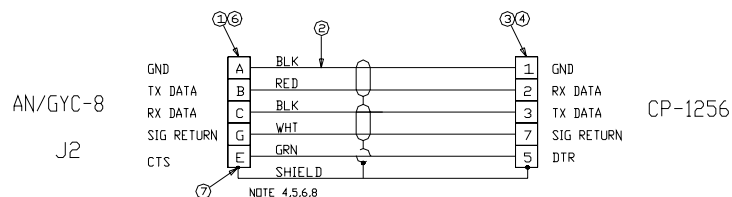


FIG.1 AN/GYC-8 TO AN/GYQ-39

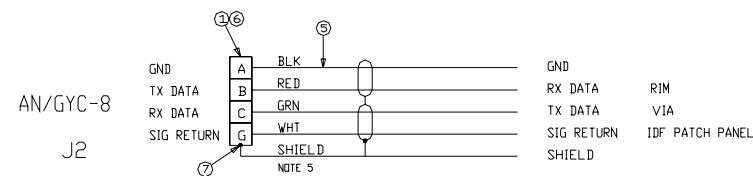


FIG.3 AN/GYC-8 TO RIM

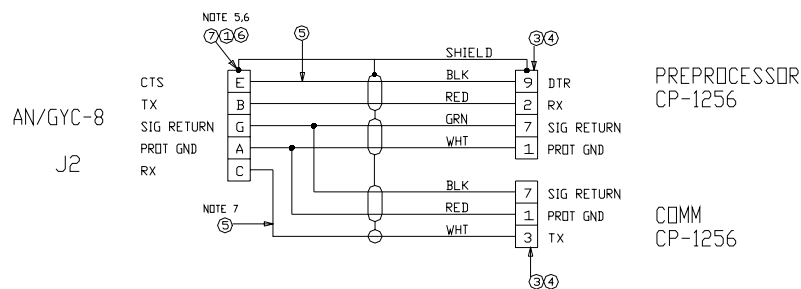


FIG.2 AN/GYC-8 TO FRITTER

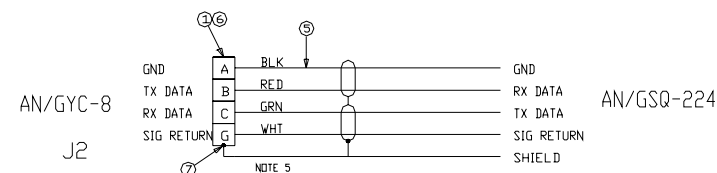


FIG.4 AN/GYC-8 TO AN/GSQ-224

## REQUIRED MATERIAL LISTING

FIND #	RML I	DESCRIPTION	QTY	REMARKS
1	8459	CONN G6 L16 - 19PW	4EA	NOTE 1
2	811	BELDEN 88777	AS REQ	NOTE 2
3	5110	CONN MS27484E10R35S	3EA	NOTE 3
4	5111	CLAMP SE 7F 120/S3.0-12	3EA	NOTE 3
5	842	BELDEN 88723	AS REQ	NOTE 2
6	8460	PINS RM20-13	75EA	
7	1324	TERMINAL LUGS	AS REQ	

## NOTES:

1. CONNECTOR AND BACKSHELL FURNISHED FOR INITIAL INSTALLATION.
2. CABLE LENGTHS WILL BE DETERMINED BY INSTALLATION SCHEME.
3. EXACT QUANTITY OF CONNECTORS AND BACKSHELLS DETERMINED BY FABRICATION REQUIREMENTS.
4. LINE DRIVERS REQUIRED IF CABLE LENGTHS EXCEED 400 FEET.
5. GROUND SHIELD AND UNUSED WIRES TO BACKSHELL AT BOTH ENDS.
6. INSTALLATION SCHEME WILL DETERMINE CABLE TERMINATION.
7. GRN OF GRN/WHT PAIR NOT USED.
8. BLK OF BLK/GRN PAIR NOT USED.

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
Brewer  
CHECKER  
C. Smith  
ENGINEER  
C. C. Snellgrove  
APPROVED  
D. Duff  
DRAWING CONTROL # 069



TITLE  
AN/GYC-8  
Interface  
SIZE  
C  
DATE ESTABLISHED  
21 MAY 88  
DRAWING NUMBER  
99-01-069  
SCALE  
Full  
DATE  
2 JAN 97  
SHEET  
1 OF 1

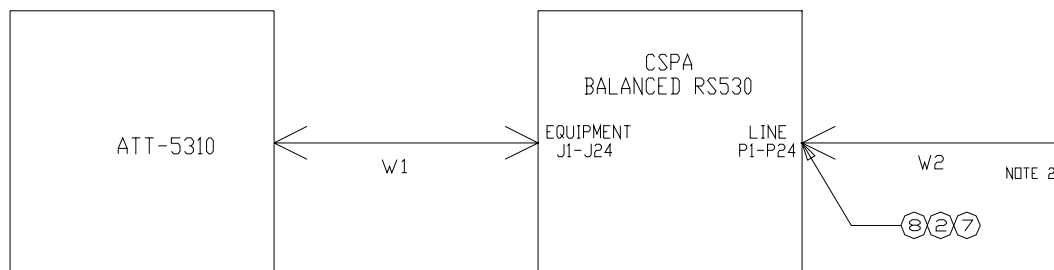


FIG. 1 SIGNAL FLOW

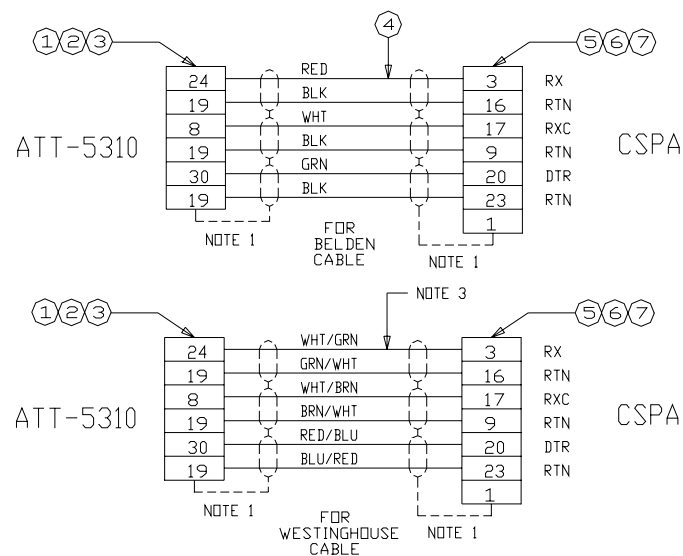


FIG. 2 CABLE W1

## LEGEND

→ CABLE WITH CONNECTOR

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	6883	DB37F CONNECTOR	01
2.	6875	CONTACT, SOCKET	AS REQ
3.	6885	BACKSHELL, RF1	01
4.	7535	3 PR. CABLE, PLENUM	AS REQ
5.	830	DB25P CONNECTOR	01
6.	6874	CONTACT, PIN	AS REQ
7.	6865	BACKSHELL, RF1	02
8.	833	DB25S CONNECTOR	01
9.	531	12 PR. CABLE, PLENUM	AS REQ
10.	7098	11 PR. CABLE, PLENUM	AS REQ

## NOTES:

- SHIELDS AND UNUSED WIRES ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL AT BOTH ENDS FOR GROUNDING.
- INSTALLATION SCHEME WILL SPECIFY CABLING DETAILS. USE STRANDED WIRE, LI 531, FOR CONNECTORS. USE SOLID WIRE, LI 7098, FOR WIRE WRAP TERMINALS.
- COLOR CODE FOR US WITH WESTINGHOUSE 3 PR. PLENUM CABLE.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN R E Muzzy		TITLE Comm Interface ATT-5310 TO CSPA	
CHECKER J Grant		SIZE C	
ENGINEER R E Muzzy		DATE ESTABLISHED 2 DEC 94	
APPROVED D. Duff		DRAWING NUMBER 99-01-076	
DRAWING CONTROL # 076		SCALE Full	SHEET 1 OF 1



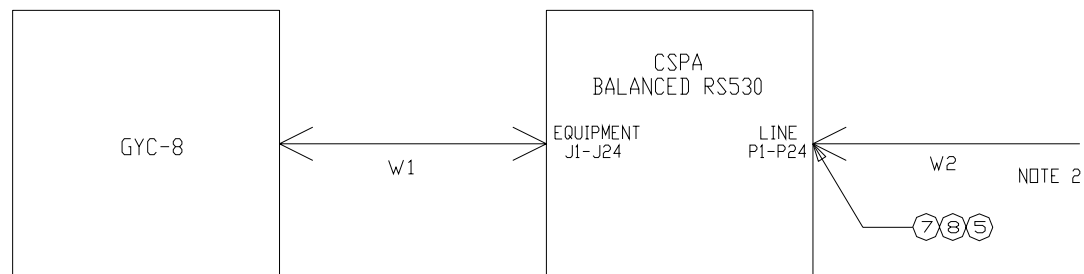
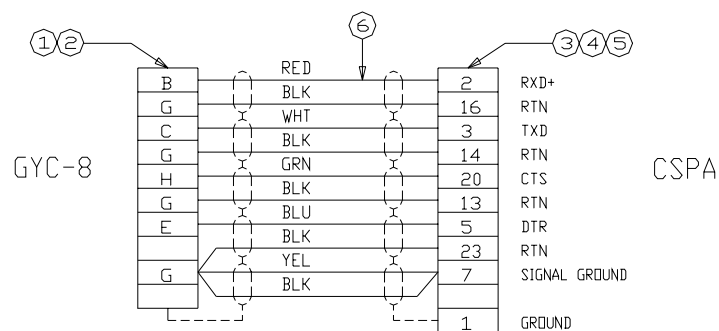


FIG. 1 SIGNAL FLOW



NOTE 1

FIG. 2 CABLE W1

## LEGEND

→ CABLE WITH CONNECTOR

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	8459	CONNECTOR, STRAIGHT PLUG, ITT CANNON	01
2.	8460	CONTACT, PIN	AS REQ
3.	830	DB25P CONNECTOR	01
4.	6874	CONTACT, PIN	AS REQ
5.	6865	BACKSHELL, RFI	02
6.	1101	6 PR. CABLE, PLENUM	AS REQ
7.	833	DB25S CONNECTOR	01
8.	6875	CONTACT, SOCKET	AS REQ
9.	531	12 PR. CABLE, PLENUM	AS REQ
10.	7098	11 PR. CABLE, PLENUM	AS REQ

## NOTES:

- SHIELDS AND UNUSED WIRES ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL FOR GROUNDING.
- INSTALLATION SCHEME WILL SPECIFY CABLING DETAILS. USE STRANDED WIRE, LI 531, FOR CONNECTORS. USE SOLID WIRE, LI 7098, FOR WIRE WRAP TERMINALS.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE Comm Interface GYC-8 to CSPA	
DRAFTSMAN R E Muzzy	CHECKER J Grant	ENGINEER R E Muzzy	APPROVED D. Duff
DRAWING CONTROL # 086		SCALE Full	DATE 2 DEC 94
		DRAWING NUMBER 99-01-086	
		SHEET 1 OF 1	

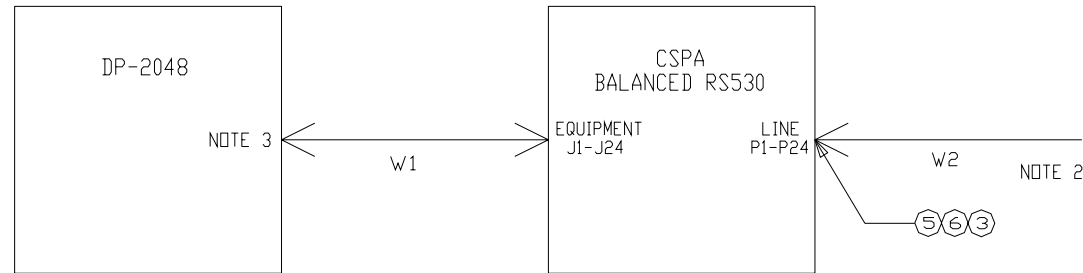


FIG. 1 SIGNAL FLOW

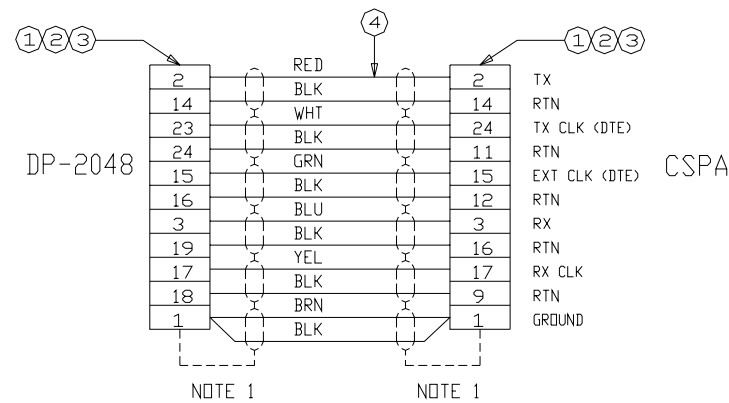


FIG. 2 CABLE W1

## LEGEND

→ CABLE WITH CONNECTOR

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	830	DB25P CONNECTOR	02
2.	6874	CONTACT, PIN	AS REQ
3.	6865	BACKSHELL, RFI	03
4.	1101	6 PR. CABLE, PLENUM	AS REQ
5.	833	DB25S CONNECTOR	01
6.	6875	CONTACT, SOCKET	AS REQ
7.	531	12 PR. CABLE, PLENUM	AS REQ
8.	7098	11 PR. CABLE, PLENUM	AS REQ

## NOTES:

- SHIELDS AND UNUSED WIRES ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL FOR GROUNDING.
- INSTALLATION SCHEME WILL SPECIFY CABLING DETAILS. USE STRANDED WIRE, LI 531, FOR CONNECTORS. USE SOLID WIRE, LI 7098, FOR WIRE WRAP TERMINALS.
- IF USING DP-2048-16, CONNECT W1 CABLE TO PORT 17, HOWEVER, IF USING DP-2048-32, CONNECT TO PORT 33.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN R E Muzzy CHECKER J Grant ENGINEER R E Muzzy APPROVED D. Duff DRAWING CONTROL # 091		TITLE Comm Interface DP-2048 to CSPA SIZE C DATE ESTABLISHED 2 DEC 94 DRAWING NUMBER 99-01-091 SCALE Full DATE 2 DEC 94 SHEET 1 OF 1	

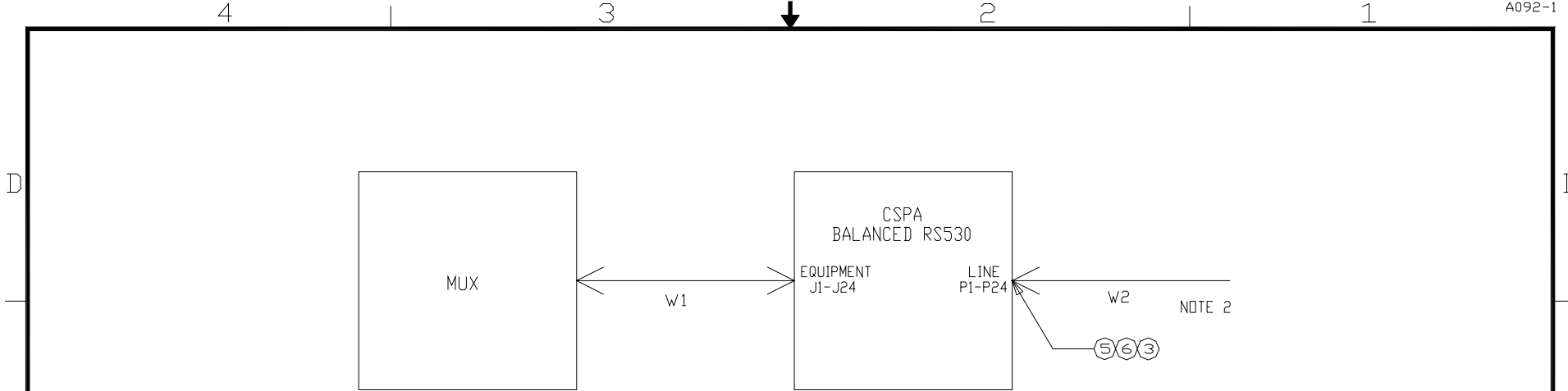


FIG. 1 SIGNAL FLOW

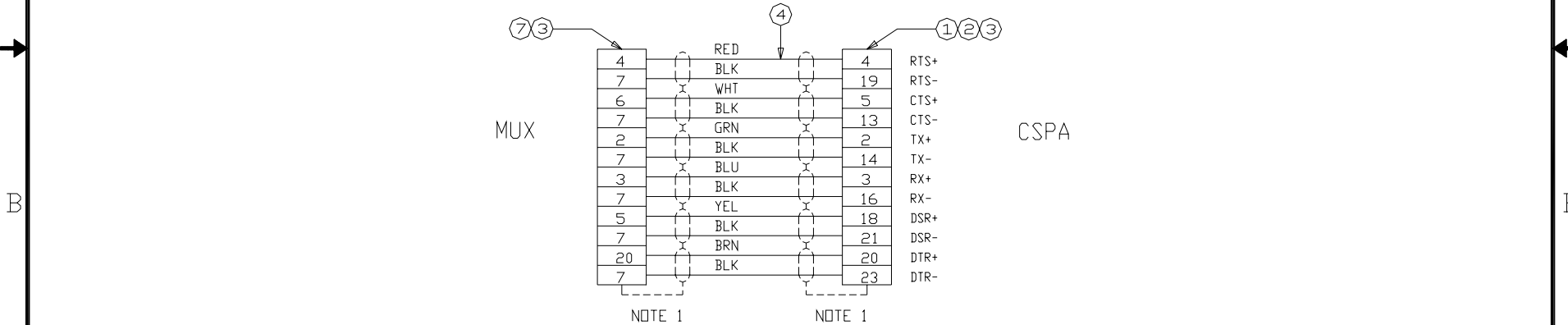


FIG. 2 CABLE W1

LEGEND

→ CABLE WITH CONNECTOR

REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	830	DB25P CONNECTOR	02
2.	6874	CONTACT, PIN	AS REQ
3.	6865	BACKSHELL, RFI	03
4.	1101	6 PR. CABLE, PLENUM	AS REQ
5.	833	DB25S CONNECTOR	01
6.	6875	CONTACT, SOCKET	AS REQ
7.	2016	CONNECTOR, D-SERIES SUBMINIATURE	01
8.	531	12 PR. CABLE, PLENUM	AS REQ
9.	7098	11 PR. CABLE, PLENUM	AS REQ

- NOTES:
- SHIELDS AND UNUSED WIRES ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL FOR GROUNDING.
  - INSTALLATION SCHEME WILL SPECIFY CABLING DETAILS. USE STRANDED WIRE, LI 531, FOR CONNECTORS. USE SOLID WIRE, LI 7098, FOR WIRE WRAP TERMINALS.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN R E Muzzy		TITLE Comm Interface MUX to CSPA	
CHECKER J Grant		SIZE C	
ENGINEER R E Muzzy		DATE ESTABLISHED 2 DEC 94	
APPROVED D. Duff		DRAWING NUMBER 99-01-092	
DRAWING CONTROL # 092		SCALE Full	
		DATE 2 DEC 1994	
		SHEET 1 OF 1	

		FRONTIER ADCOM 2-M CONTROLLER CARD PINS	
DB-25 PINS	PIN FUNCTION	CHANNEL 'A'	CHANNEL 'B'
1	SIGNAL GROUND	20	51
2	SEND DATA	41	8
3	RECEIVE DATA	61	29
4	REQUEST TO SEND	18	49
5	CLEAR TO SEND (STEP)	39	6
6	DATA MODE/DATA SET READY (USE 7 FOR RETURN)	59	27
7	SIGNAL COMMON	16	47
8	RECEIVER READY	37	4
9	RECEIVER READY RETURN	57	25
10	RECEIVER COMMON	14	45
11	SEND DATA RETURN	35	2
12	CLEAR TO SEND RETURN	55	23
13	REQUEST TO SEND RETURN	12	43
14	SEND TIMING/CLOCK RETURN	62	30
15	SEND TIMING/CLOCK	19	50
16	RECEIVE DATA RETURN	40	7
17	RECEIVE TIMING CLOCK	60	28
18	RECEIVE TIMING/CLOCK RETURN	17	48
19	DATA MODE RETURN	38	5
20	TERMINAL READY/DATA TERMINAL READY	58	28
21	TERMINAL READY RETURN	15	46
22	SPARE	36	3
23	TERMINAL TIMING RETURN	56	24
24	TERMINAL TIMING	13	44
25	SPARE	34	1

NOTES 1,4,5

NOTES 1,4,5

NOTES 1,4,5

CHANGED LI 56 TO LI 2016 14 JUN 91 TEM  
 ADDED NOTE SIX, CHANGED  
 LI 7101 TO LI 1101.  
 CHANGED LI 2016 TO  
 LI 833 AND LI 6875 03 NOV 92 TRR  
 CHANGED LI 57 TO LI 6865 15 APR 93 REM

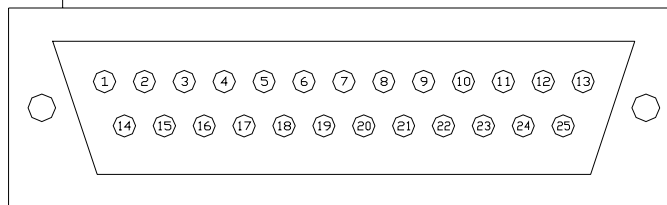
## NOTES:

1. THE FOLLOWING FUNCTIONS AVAILABLE ON CONNECTOR DB-25 ARE NOT REQUIRED FOR NORMAL OPS/COMM USE, BUT MAY REQUIRE STRAPPING TO ACCOMMODATE IBM SOFTWARE.
2. USE 6 CABLE PAIR FOR STREAMLINER APPLICATION.
3. USE 3 CABLE PAIR FOR OPS/COMM 75 BAUD APPLICATION. RECEIVE INPUT SHOULD BE ASYNCHRONOUS (FREE-RUNNING), TRANSMIT UNDER CLEAR TO SEND (STEP) CONTROL.
4. JUMPER PINS 20,6, AND 8 AT DB-25 CONNECTOR, IF REQUIRED.
5. JUMPER PINS 20,6, AND 8 GROUP TO PIN 5 (CLEAR TO SEND), IF REQUIRED.
6. SHIELDS AND UNUSED WIRES ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL FOR GROUNDING.

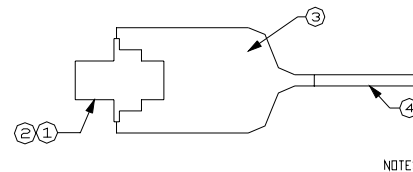
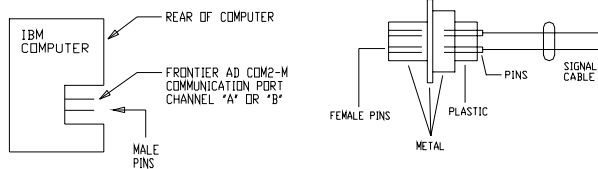
## REQUIRED MATERIALS LIST

FIND NO.	L.I.	DESCRIPTION	QTY.
1	833	DB25S	4 EA
2	6875	SOCKET	AS REQ
3	6865	BACKSHELL	4 EA
4	1101	CABLE	AS REQ

PINS ON COMPUTER

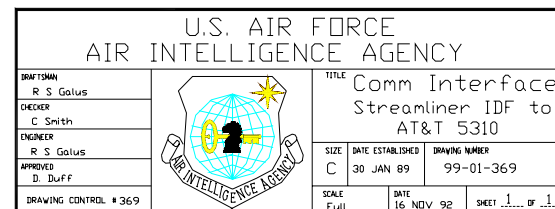


- 1 REAR OF FEMALE RECEPTACLE CONNECTOR (DB-25)
- 2 CONNECT SIGNAL CABLES TO PINS SHOWN



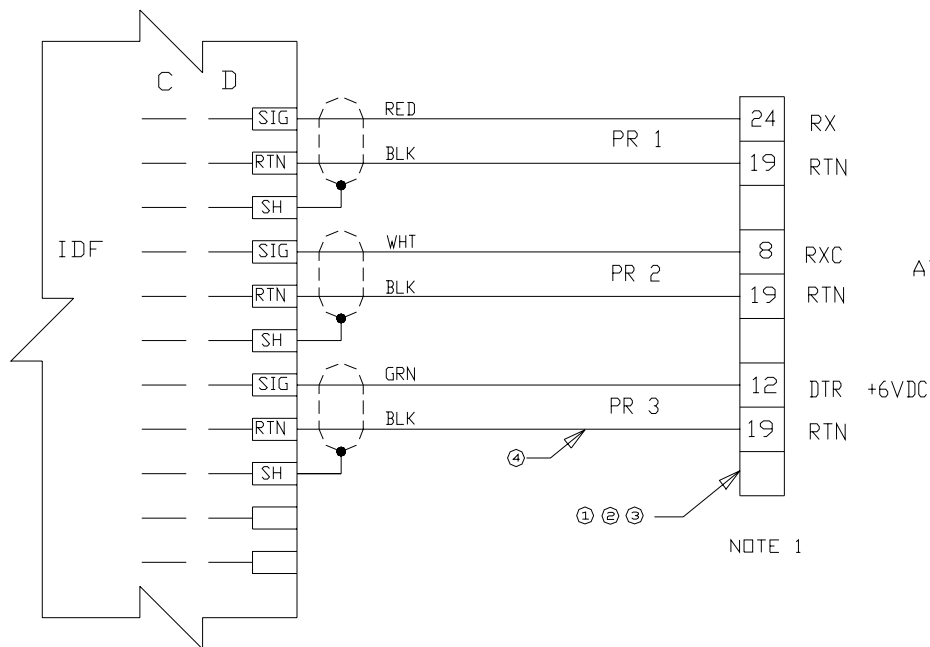
NOTES 2,3,6

U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN Davis/Porter		TITLE ASTW Comm Interface Connector Details	
CHECKER T E Moorman		SIZE C	
ENGINEER C Smith		DATE ESTABLISHED 8 AUG 88	DRAWING NUMBER 99-01-351
APPROVED D. Buff		SCALE Full	DATE 15 APR 93
DRAWING CONTROL # 351		SHEET 1 OF 1	



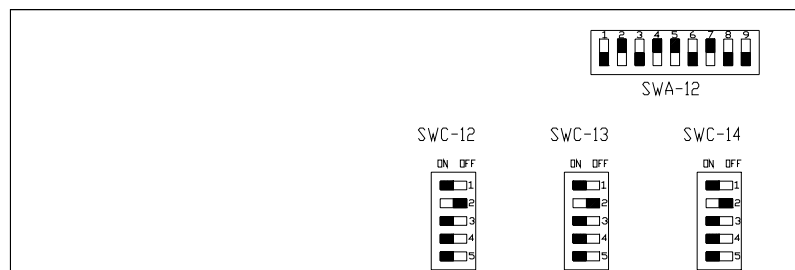
CORRECTED RML, ADDED NOTE 1, AND  
STANDARDIZED DRAWING

16 NOV 92 REM

AT & T  
5310

NOTE 1

## 5310 SERIAL PRINTER SWITCH SETTINGS



NOTES 2 THRU 6

## AT&amp;T 5310 PROGRAMING:

CPI : 10  
LPI : 6  
FLGT: 1  
RMGN: 80  
TMGN: 1  
BMGN: 66  
CHAR: ASCI  
ALTF: ASCI  
WRP : YES  
PCTL : NO  
EMUL: ANSI  
VIEW: MAN  
LFON: NO  
CRON: NO  
STPB: 1.0  
PRTY: EVEN  
BAUD: 2400  
FLOW: EIA  
DC24: ITA5  
FFEM: NO  
LP : NO  
ECHO: NO  
PALM: NO  
BUFR: 12K  
ALGN: 0  
HTAB: 1,9,17,25,33,41,49,57,65,73  
VTAB:  
RTRN: <-  
AUT1:  
AUT2:  
AUT3:  
AUT4:  
AUT5:  
AUT6:  
ANBK: <==  
USS1: XCRITIC  
UTS2:  
UST3:  
EMST: ==NNNN

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	6883	CONNECTOR DB37F	1 EA
2.	6875	SOCKET CONTACTS	6 EA
3.	6882	BACKSHELL RFI/EMI	1 EA
4.	7535	CABLE 3 INDIVIDUALLY SHIELDED PAIR	AS REQ

## NOTES:

1. UNUSED WIRES AND SHIELDS ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL FOR GROUNDING.
2. RUN A COPY OF THE PRINTER PROGRAMING.
3. TURN OFF POWER.
4. REMOVE THE PLATTER AND FOUR SCREWS FROM THE BOTTOM OF THE PRINTER.
5. LIFT TOP FORWARD AND UP. CAUTION: TOP IS ATTACHED TO BOTTOM WITH INTERCONNECTING CABLING.
6. SET SWITCHES PER DRAWING ABOVE.

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
R S Galus  
CHECKER  
C Smith  
ENGINEER  
R S Galus  
APPROVED  
D. Buff  
DRAWING CONTROL #370



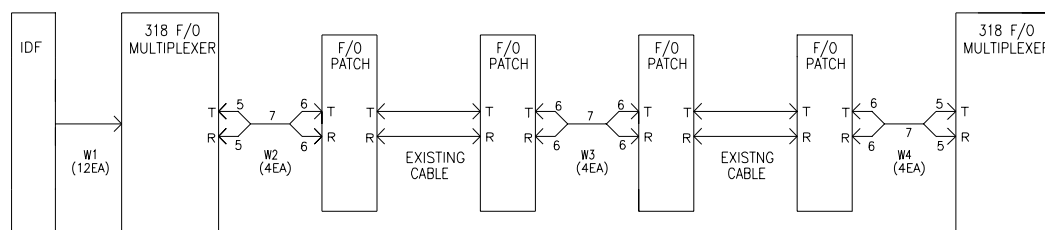
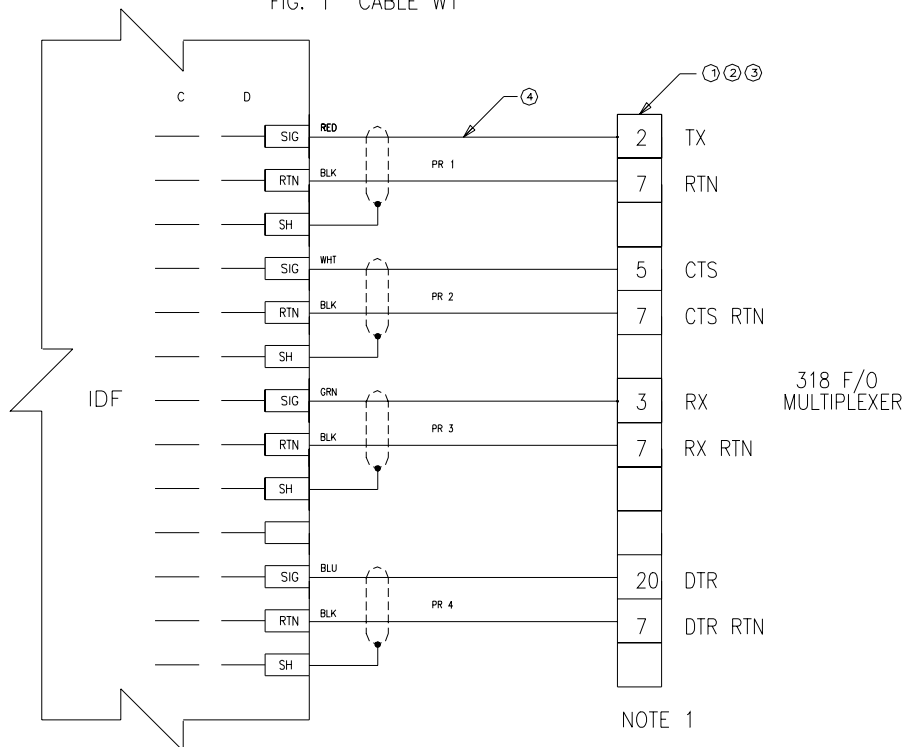
TITLE  
Comm Interface  
OPSCOM IDF to  
AT&T 5310

SIZE  
C  
DATE ESTABLISHED  
30 JAN 89  
DRAWING NUMBER  
99-01-370

SCALE  
Full  
DATE  
16 NOV 92  
SHEET 1 OF 1

REDRAWN TO STANDARD 17 NOV 92 REM

FIG. 1 CABLE W1



## REQUIRED MATERIAL LISTING

FIND #	RML LI	DESCRIPTION	QTY
1	830	CONN. DB25P	12EA
2	6874	PIN CONTACTS	AS REQ
3	6865	8/5 AMP 745173-3	12EA
4	1101	CABLE & PR	AS REQ
5	987	CONN. 905-405-5007	8EA
6	988	CONN. 501380-1	16EA
7	089	CABLE 223812	AS REQ

## NOTES:

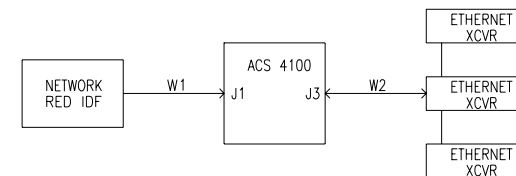
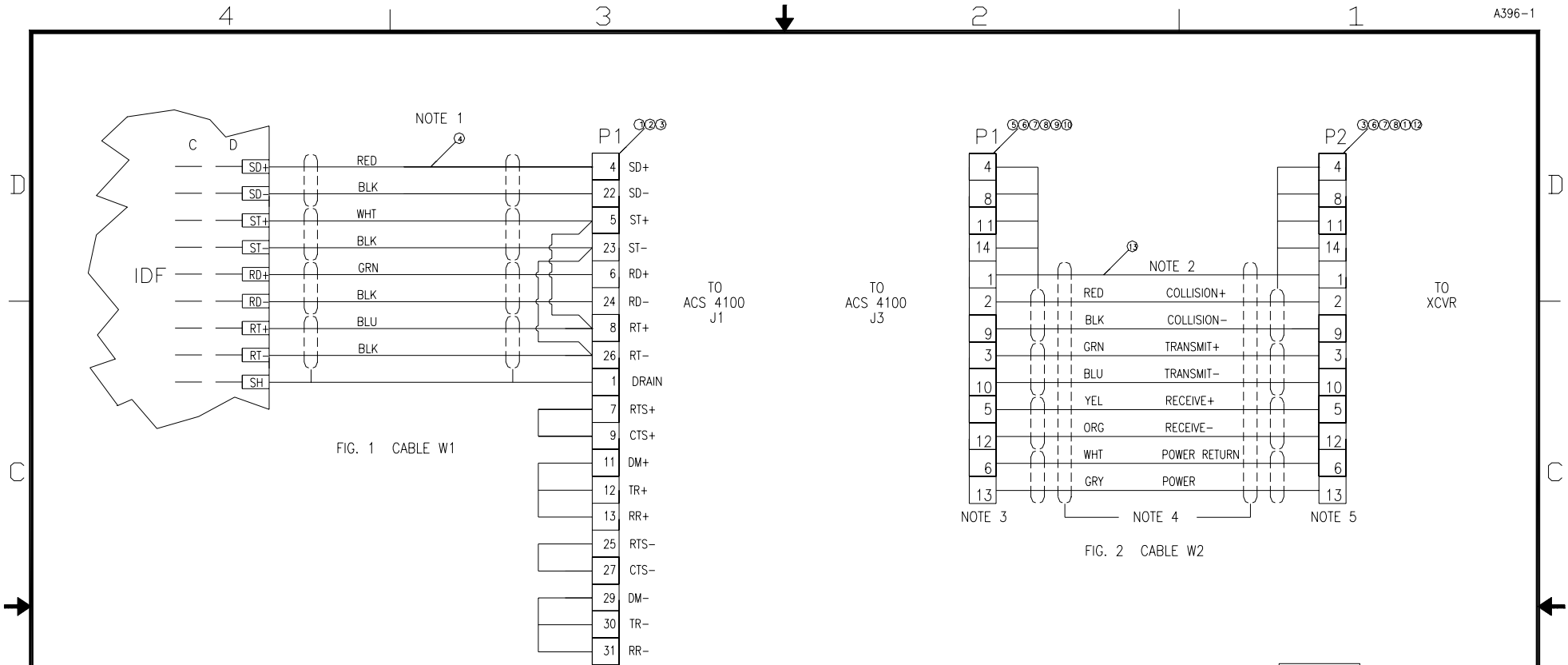
1. UNUSED WIRES AND SHIELDS ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL FOR GROUNDING.
2. INSTALLATION SCHEME WILL SPECIFY CABLE LENGTHS.
3. TRANSMIT FIBER CABLE FROM UNIT #1 WILL CONNECT TO RECEIVE PORT ON UNIT #2.

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
R. E. Muzzy  
CHECKER  
C. Smith  
ENGINEER  
C. Smith  
APPROVER  
D. Duff  
DRAWING CONTROL # 371



TITLE  
Comm Interface  
IDF to ODS 318 Fiber  
Optic Multiplexer  
SIZE  
C  
DATE ESTABLISHED  
30 OCT 90  
DRAWING NUMBER  
99-01-371  
SCALE  
Full  
DATE  
17 NOV 92  
SHEET  
1 OF 1



## LEGEND

→ CABLE WITH CONNECTOR

## REQUIRED MATERIAL LISTING

FIND #	RML LI	DESCRIPTION	QTY
1	6883	CONN. DB37F	1EA
2	6885	B/S AMP 745174-4	1EA
3	6875	SOCKET CONTACTS	28EA
4	1101	CABLE 6 PR. P/N 8768	AS REQ
5	6874	CONTACT PIN	9EA
6	6866	INNER FERRULE	2EA
7	6867	OUTER FERRULE	2EA
8	6869	BACKSHELL	2EA
9	6870	PLUG, CONNECTOR	1EA
10	980	LOCKING POST	1ST
11	6868	CONNECTOR, RECEPTACLE	1EA
12	6871	LATCH SLIDE ASSY	1EA
13	6864	CABLE, 4 PAIR	AS REQ

## NOTES:

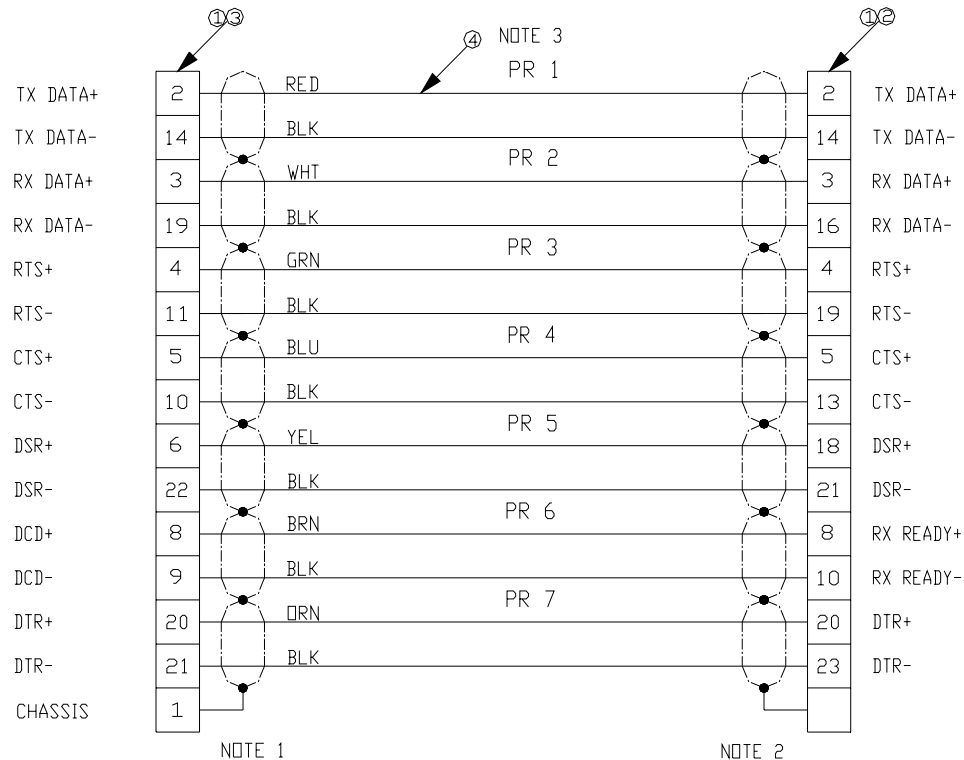
1. ALL UNUSED CABLE PAIR WILL BE GROUNDED AT BOTH ENDS. AT J1 END, FOLD BACK STRIP, AND COMPRESS INTO THE CABLE OPENING OF THE BACKSHELL.
2. CONNECT DRAIN WIRE TO PIN 1.
3. DISCARD CAPTIVE SCREWS AND INSTALL LOCKING POSTS.
4. GROUND OUTER SHIELD TO BACKSHELLS USING FERRULES.
5. DISCARD CAPTIVE SCREWS AND INSTALL LATCH SLIDE.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN D. M. WILHITE CHECKER C. SMITH ENGINEER D. M. WILHITE APPROVED T. E. MOORMAN DRAWING CONTROL # 396		TITLE COMM INTERFACE WIDE AREA NETWORK IDF TO ETHERNET LAN SIZE C DATE ESTABLISHED 31 JUL 92 DRAWING NUMBER 99-01-396 SCALE FULL DATE 31 JUL 92 SHEET 1 OF 1	





DP2048  
ASYNCHRONOUS PORT  
J1-J16  
OR  
J1-J32



## NOTES:

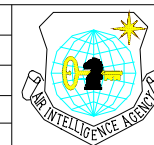
1. UNUSED WIRES ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL.
2. UNUSED WIRES AND SHIELDS ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL FOR GROUNDING.
3. INSTALLATION SCHEME WILL SPECIFY CABLE LENGTH.

## REQUIRED MATERIALS LIST

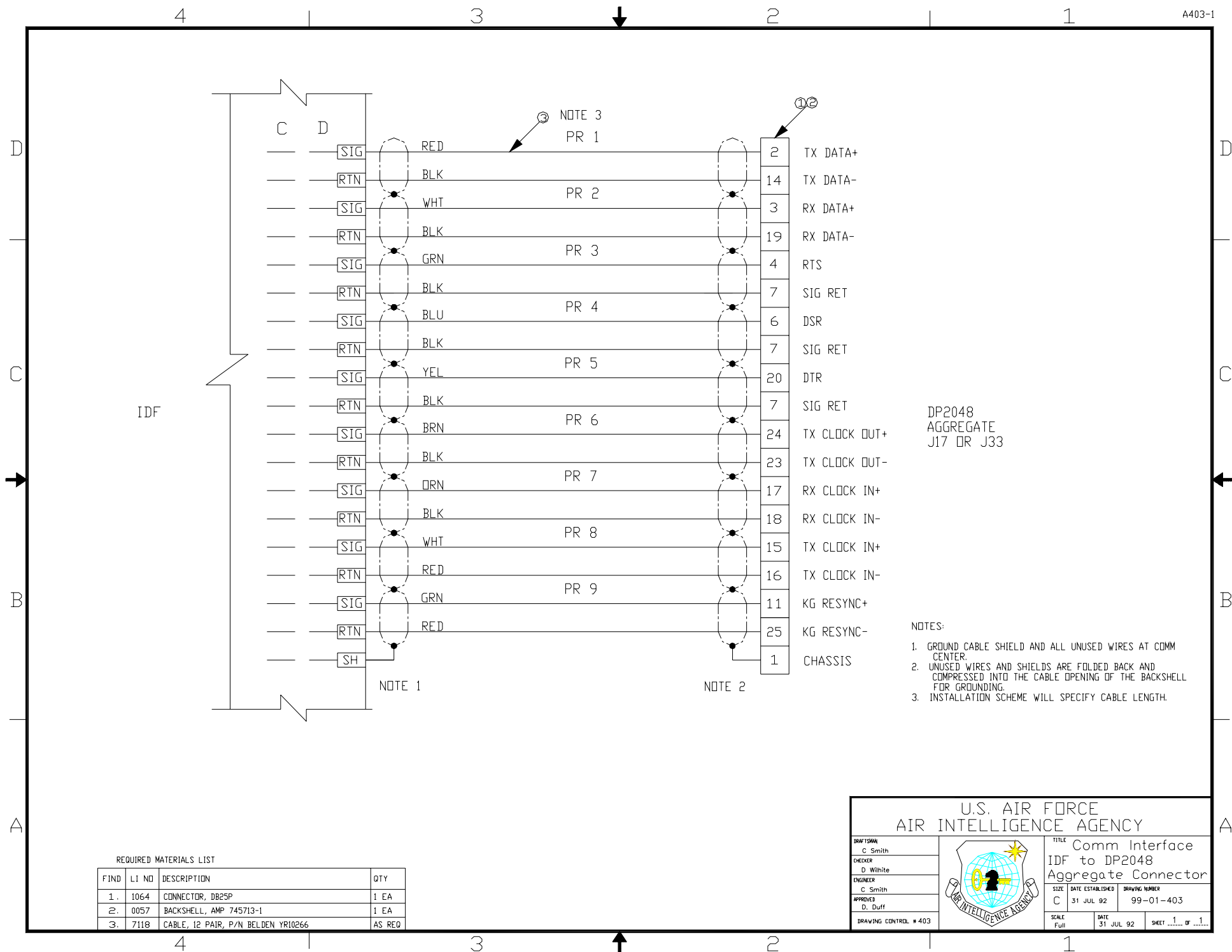
FIND	LI NO	DESCRIPTION	QTY
1.	1064	CONNECTOR, DB25P	1 EA
2.	2016	CONNECTOR, DB25S	1 EA
3.	0057	BACKSHELL, AMP 745713-1	2 EA
4.	7118	CABLE, 12 PAIR, P/N BELDEN YR10266	AS REQ

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
C Smith  
CHECKER  
D Wilhite  
ENGINEER  
C Smith  
APPROVED  
D. Duff  
DRAWING CONTROL # 402



TITLE  
DP2048  
Asynchronous Port  
Connector to CSPA  
SIZE C DATE ESTABLISHED 31 JUL 92 DRAWING NUMBER 99-01-402  
SCALE Full DATE 31 JUL 92 SHEET 1 OF 1



D

C

B

A

D

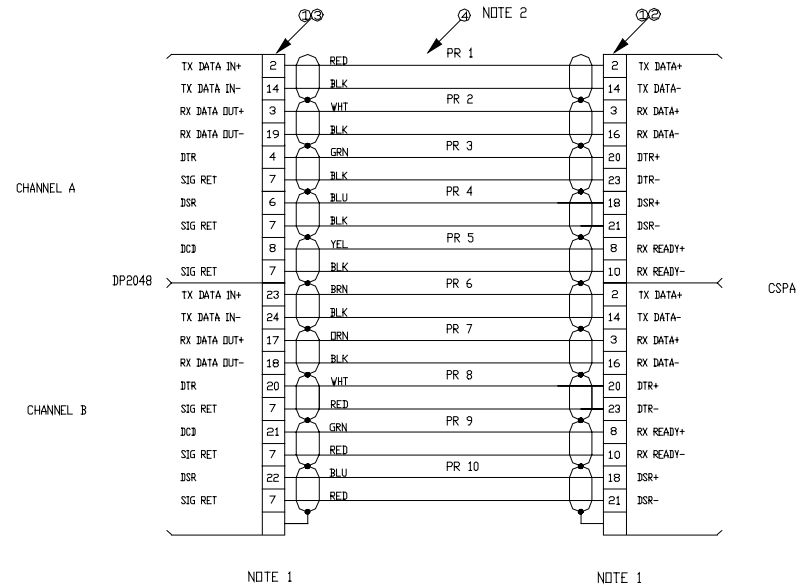
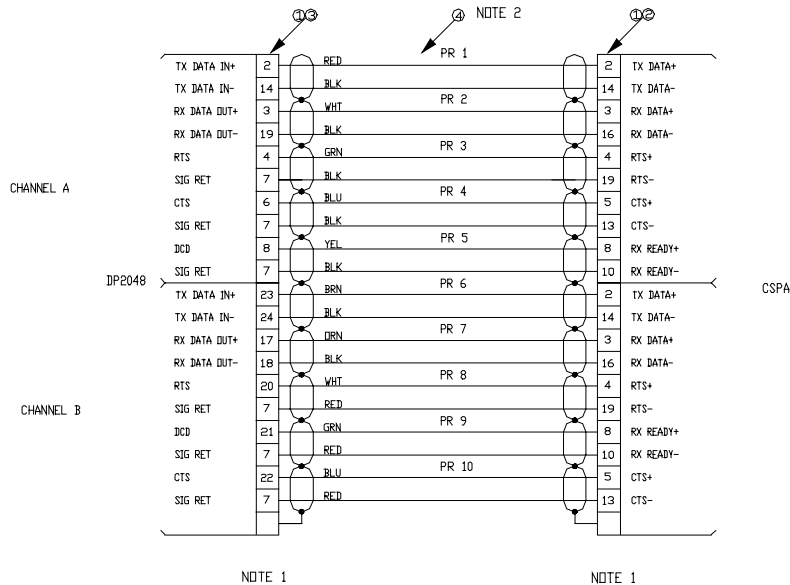
C

B

A

## NOTES:

1. UNUSED WIRES AND SHIELDS ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL FOR GROUNDING.
2. INSTALLATION SCHEME WILL SPECIFY CABLE LENGTH.
3. RTS, DTR, CTS, AND DSR ARE EITHER/OR OPTIONS. FIG. A DEPICTS THE RTS AND CTS OPTION. FIG. B DEPICTS THE DTR AND DSR OPTION.

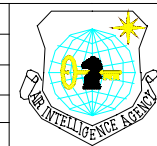


## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	1064	CONNECTOR, DB25P	1 EA
2.	2016	CONNECTOR, DB25S	1 EA
3.	0057	BACKSHELL, AMP 745713-1	2 EA
4.	7118	CABLE, 12 PAIR, P/N BELDEN YR10266	AS REQ

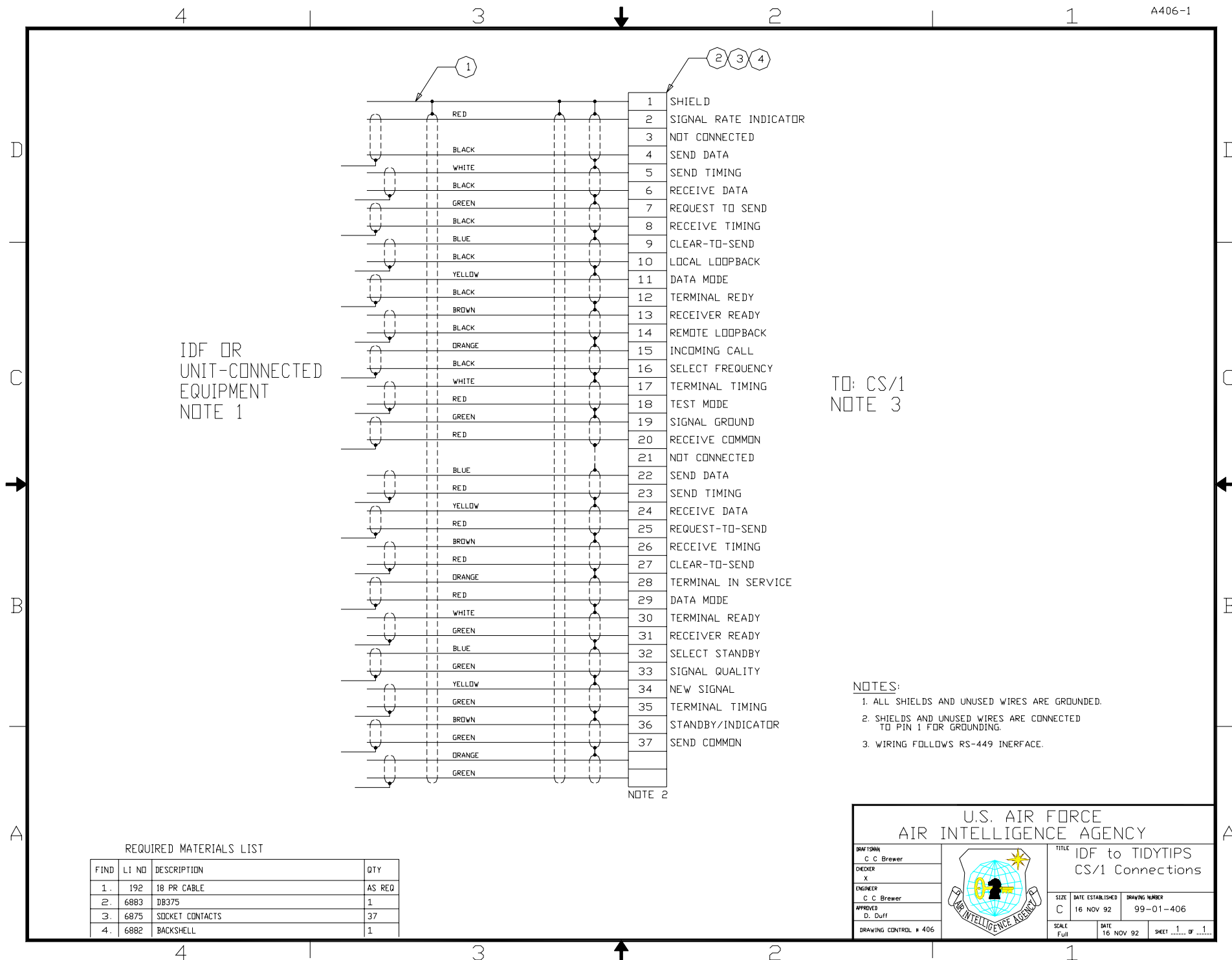
U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
C. Smith  
CHECKER  
D. Wilhite  
ENGINEER  
C. Smith  
APPROVED  
D. Duff  
DRAWING CONTROL # 404



TITLE  
DP2048 STATMUX  
Basis Module to CSPA  
Odd and Even Numbered Connectors

SIZE C	DATE ESTABLISHED 31 JUL 92	DRAWING NUMBER 99-01-404
SCALE Full	DATE 31 JUL 92	SHEET 1 of 1



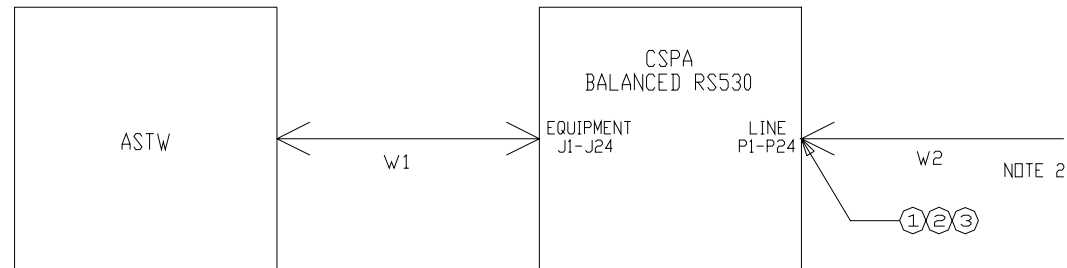


FIG. 1 SIGNAL FLOW

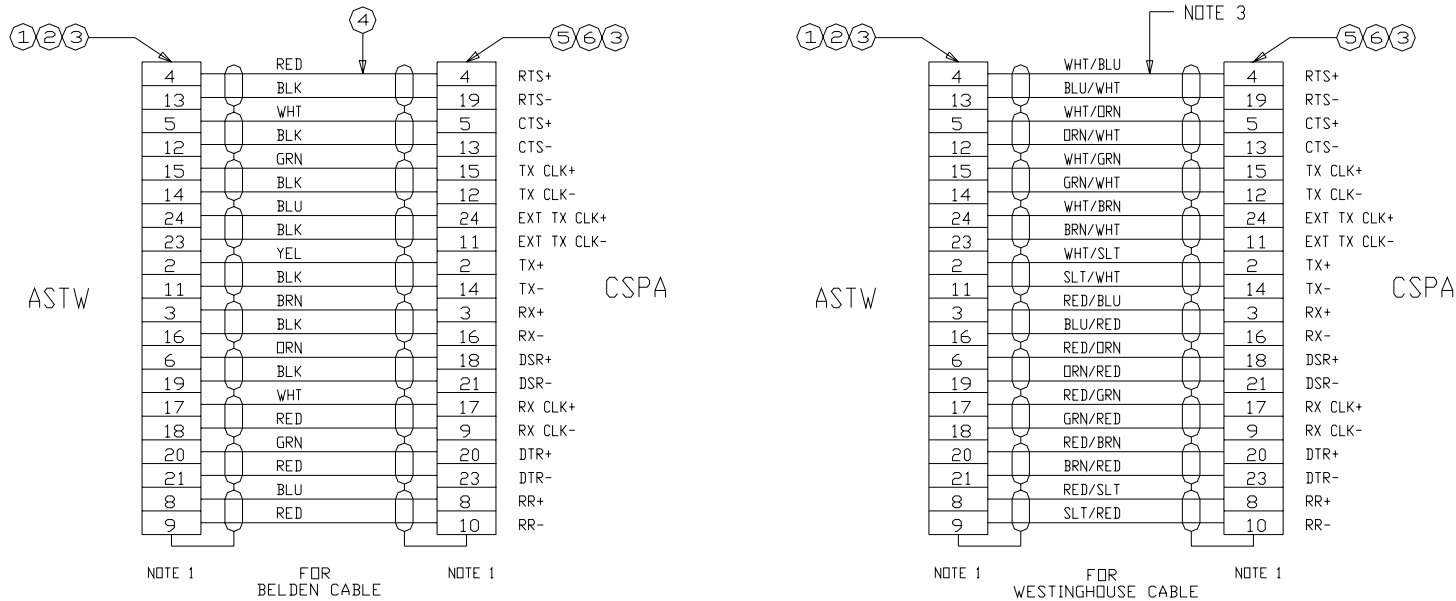


FIG. 2 CABLE W1

## LEGEND

→ CABLE WITH CONNECTOR

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	833	DB25S CONNECTOR	02
2.	6875	CONTACT, SOCKET	AS REQ
3.	6865	BACKSHELL, RFI	03
4.	531	12 PR. CABLE, PLENUM	AS REQ
5.	830	DB25P CONNECTOR	01
6.	6874	CONTACT, PIN	AS REQ
7.	7098	11 PR. CABLE, PLENUM	AS REQ

## NOTES:

- SHIELDS AND UNUSED WIRES ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL AT BOTH ENDS FOR GROUNDING.
- INSTALLATION SCHEME WILL SPECIFY CABLING DETAILS. USE STRANDED WIRE, LI 531, FOR CONNECTORS. USE SOLID WIRE, LI 7098, FOR WIRE WRAP TERMINALS.
- COLOR CODE FOR US WITH WESTINGHOUSE 12 PR. PLENUM CABLE.

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

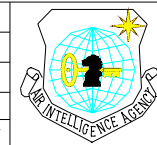
DRAFTSMAN  
T R Rademacher

CHECKER  
C Smith

ENGINEER  
R E Muzzy

APPROVER  
D. Duff

DRAWING CONTROL # 407



TITLE  
Comm Interface  
ASTW to CSPA

SIZE  
C

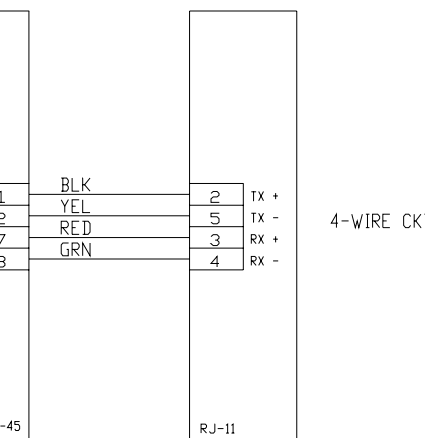
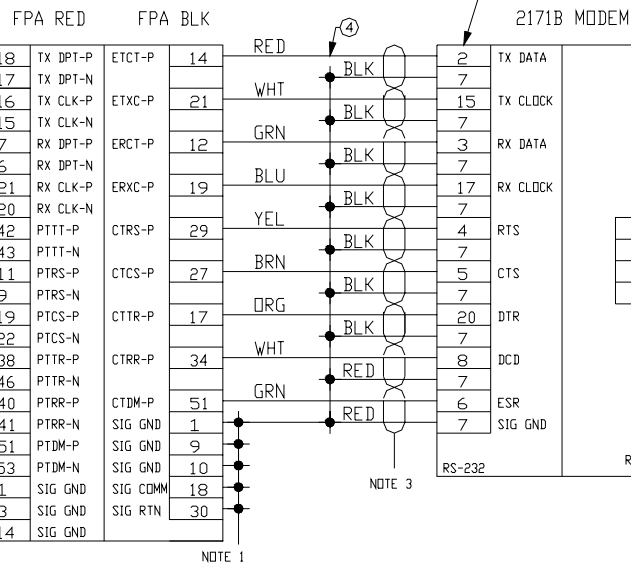
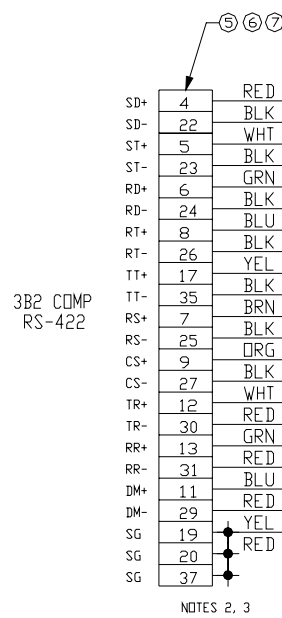
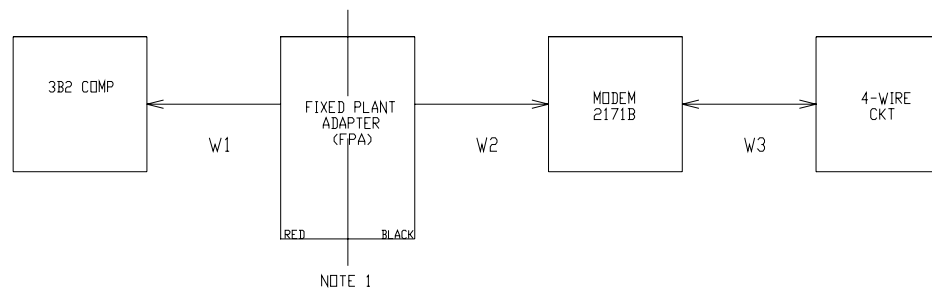
DATE ESTABLISHED  
12 JAN 93

DRAWING NUMBER  
99-01-407

SCALE  
Full

DATE  
2 DEC 94

SHEET  
1 OF 1



## LEGEND

→ CABLE WITH CONNECTOR

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	830	DB25P CONNECTOR	AS REQ
2.	6874	PIN CONTACTS	AS REQ
3.	57	BACKSHELL	AS REQ
4.	7098	CABLE	AS REQ
5.	6883	DB37S CONNECTOR	AS REQ
6.	6875	SOCKET CONTACTS	AS REQ
7.	6882	BACKSHELL	AS REQ

## NOTES:

1. CONNECT ALL UNUSED WIRES, SHIELD DRAIN WIRES, AND SIGNAL GROUNDS TO THE SIGNAL GROUND POST IN THE FPA AND THEN TO THEIR APPROPRIATE GROUND POINT (RED AND BLACK).
2. JUMPER PINS 19, 20, AND 37 AND SOLDER TO THE YELLOW WIRE OF THE YEL/RED PAIR.
3. SHIELDS AND UNUSED WIRES ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL FOR GROUNDING. ENSURE UNUSED WIRES ARE STRIPPED SUFFICIENTLY TO MAKE CONTACT WITH THE BACKSHELL.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE Comm Interface 3B2 to FPA to Modem	
DRAFTSMAN T R Rademacher	CHECKER C Smith	ENGINEER T R Rademacher	APPROVED D. Duff
DRAWING CONTROL # 409		SIZE C	DATE ESTABLISHED 26 JUL 93
		DRAWING NUMBER 99-01-409	SHEET 1 OF 1

UPDATED RML, DELETED NOTE 6  
AND CADD REDRAW  
MOVED FROM CATEGORY 14.

30 JUL 92 DMW  
2 JAN 96 THH

## NOTES:

1. MFS WILL DETERMINE THE CABLE LENGTH AND TYPE CONNECTOR ON THE MULTI-COUPLER END.
2. MFS WILL DETERMINE THE CABLE LENGTH AND TYPE CONNECTOR AT THE POSITION RECEIVER END.
3. THE SSVS-879-2 ANTENNA SWITCH UNIT WILL BE MOUNTED IN A RACK ADJACENT TO OR PART OF THE VHF RDP. INSTALL 1 3/4 INCH BLANK PANELS BETWEEN SWITCH UNITS.
4. MFS WILL DETERMINE THE CABLE LENGTH FROM THE SSVS-879-2 LOCATED IN OR NEAR THE VHF RDP TO THE SSVS-879-1A LOCATED IN THE POSITION.
5. GROUND CABLE SHIELD AND ALL UNUSED WIRES TO THE BACKSHELLS OF P26 AND P1 WITH TERMINAL LUGS.

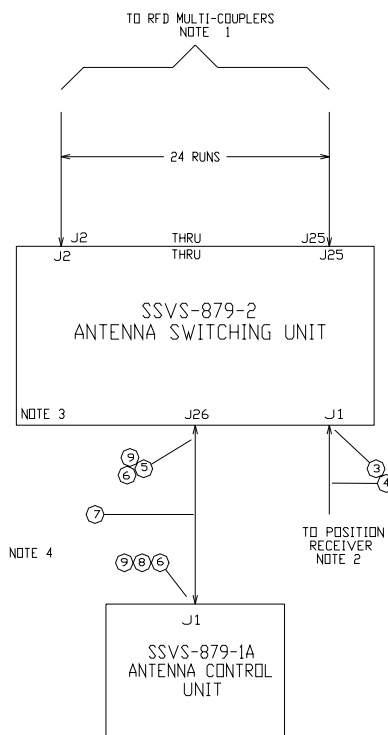


FIG A  
SIGNAL FLOW

## REQUIRED MATERIALS LIST

FIND NO.	LT NO.	DISCRIPTION	QTY	REMARKS
1.	383	RG-223	AR FT	NOTE 1
2.	394	BNC CONNECTOR UG-89/CU	24 EA	
3.	357	N-TYPE CONNECTOR	1 EA	
4.	544	RG-214/U	AR FT	NOTE 2
5.	7236	CONNECTOR M83723-14R1832N	1 EA	
6.	764	BACKSHELL M83723-35A-18	2 EA	
7.	78	CABLE 30 CONDUCT 55470/30	AR FT	NOTE 4
8.	7235	CONNECTOR MS3476L-18-32S	1 EA	
9.	1324	TERMINAL LUG	2 EA	

TO J26  
SSVS-879-2  
ANTENNA  
SWITCHING UNIT

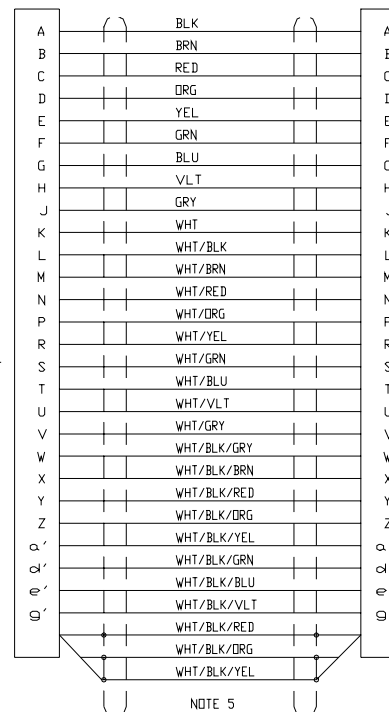
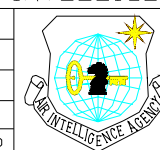


FIG B  
CONTROL CABLE WIRING

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
D. M. Wilhite  
CHECKER  
C. Smith  
ENGINEER  
D. M. Wilhite  
APPROVED  
D. Duff  
DRAWING CONTROL # 050



TITLE  
SSVS-879-1A  
Antenna Control  
Signal Flow & Wiring Diagram  
SIZE  
C  
DATE ESTABLISHED  
28 FEB 87  
DRAWING NUMBER  
99-02-050  
SCALE  
Full  
DATE  
2 JAN 97  
SHEET  
1 OF 3



30 JUL 92 DMW  
2 JAN 97 TMH

1. IF LESS THAN SWITCH UNITS ARE REQUIRED, USE 3 1/2 INCH BLANK PANELS TO FILL THE SPACE.
2. MOUNT RACK IAW 99-13-288 FOR RAISED FLOOR.
3. INSTALL AC POWER IAW 99-13-288. IF MORE THAN 10 ANTENNA SWITCH UNITS ARE INSTALLED IN THE RACK, SECOND POWER STRIP WILL NEED TO BE ADDED ON THE OPPOSITE SIDE OF THE RACK.
4. MOUNTING ON HARD FLOOR REQUIRES 2E408 BLOWER.
5. SEE 99-06-331 FOR RAISED FLOOR COOLING.
6. SEE SHT. 3 FOR OVERHEAD POWER AND CABLE CHUTE DETAILS.

## FABRICATION REQUIREMENTS

99-15-172 CABLE CHUTE  
99-16-288 EMCOR AC POWER 2 EA.

## REQUIRED MATERIALS LIST

FIND NO.	LI NO.	DISCRPTION	QTY	REMARKS
		PWR-C	2 EA	RAISED FLOOR
		PWR-A2	2 EA	HARD FLOOR
	383	RG-223	AR FT	QTY BY MFIS
	394	BNC CONN. UG-89/CU	336 EA	
	357	N-TYPE CONNECTOR	14 EA	
	7236	CONN M83723-14R1832N	14 EA	
	7235	CONN MS34761-18-32S	14 EA	
	764	BACKSHELL M83723-35A-18	28 EA	
	78	CABLE 30 CONDUCT 55470/30	AR FT	QTY BY MFIS
	544	RG-214	AR FT	QTY BY MFIS
	492	BLANK PANEL 1 3/4"	14 EA	
	516	BLANK PANEL 5 1/4"	1 EA	
	3051	EMCOR CABINET	1 EA	
	3052	EMCOR DOOR	1 EA	
	3053	EMCOR SIDE PANELS	2 EA	
	113	GROMMET MATERIAL	29 IN	
	690	CONTACT ADHESIVE	AS REQ	

U.S. AIR FORCE AIR INTELLIGENCE AGENCY		
DRAFTSMAN D. M. White		TITLE SSVG-879-2 Antenna Switch Front Panel
CHECKER C. Smith		SIZE C
ENGINEER D. M. White		DATE ESTABLISHED 28 FEB 87
APPROVED D. Duff		DRAWING NUMBER 99-02-050
DRAWING CONTROL # 050		SCALE Full
		SHEET 2 of 3

D X W X H (INS)	24 X 22 9/16 X 82 3/8
WEIGHT (LBS)	389
POWER REQ (AMPS)	1.75

TECH DATA:  
TOTAL WEIGHT (APPROX) 389 LBS.

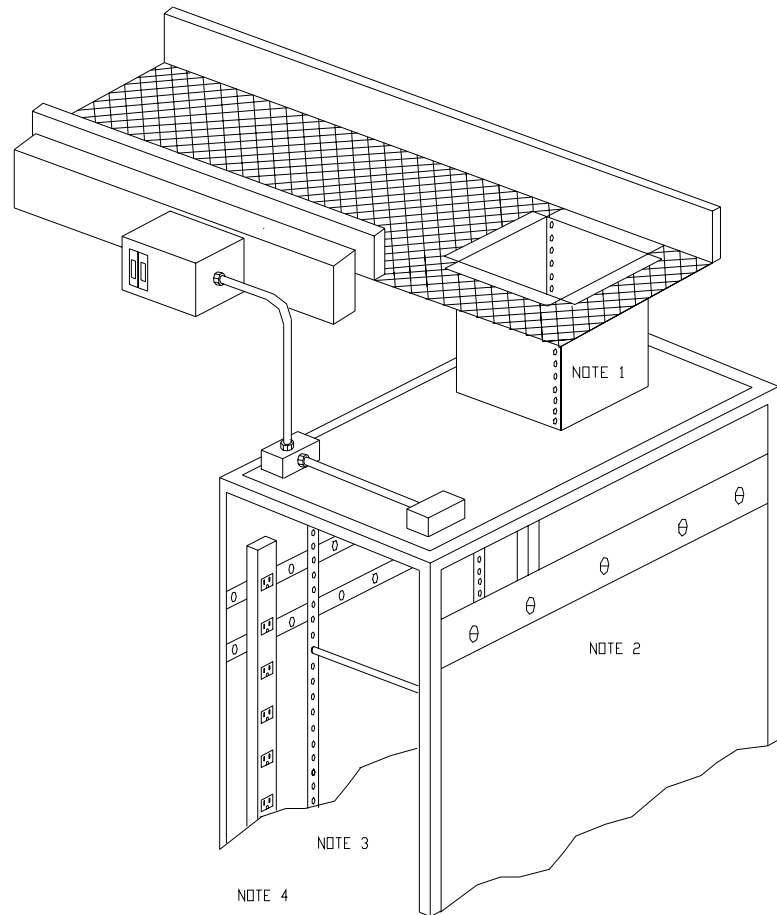
TOTAL POWER (APPROX) 1.75 AMPS

SPACE FACTOR (APPROX) 20 SQ. FT.

REDREW TO CADD, CHANGED NOTE 4.  
MOVED TO CATEGORY 2 & UPDATE NOTES. 2 JAN 97 CCS TMH

## NOTES:

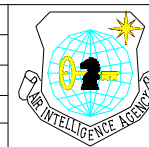
1. FAB CABLE CHUTE IAW 99-15-172. CUT HOLE IN TOP OF RACK TO MATCH ALIGNMENT OF CABLE CHUTE.
2. CUT SIDE PANEL OF RACK EVEN WITH TOP OF HORIZONTAL FRAME SUPPORT. CUT AND BEND ALUMINUM SHEET TO FIT OVER SIDE PANEL AND ATTACH TO BOTTOM HOLES OF HORIZONTAL SUPPORT USING CLIP NUT AND 10-32 SCREW. GROMMET MATERIAL (L1 113) MAY BE PLACED OVER EDGE OF CUT AND HELD IN PLACE WITH CONTACT ADHESIVE (L1 690) IF SIZE AND WEIGHT OF CABLE WILL ALLOW.
3. MOVE REAR VERTICAL SUPPORTS IN 18 INCHES. MOUNT LACING BARS 2 FOR EVERY SWITCH UNITS IAW 99-15-344, SHT 2, DETAIL C.
4. INSTALL TWO AC POWER STRIPS. SEE 99-13-328, FOR OVERHEAD. FOR RAISED FLOOR, INSTALL SECOND STRIP ON OPPOSITE SIDE USING SAME DETAILS AS SHEET 1, 99-13-288.



OVERHEAD POWER

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

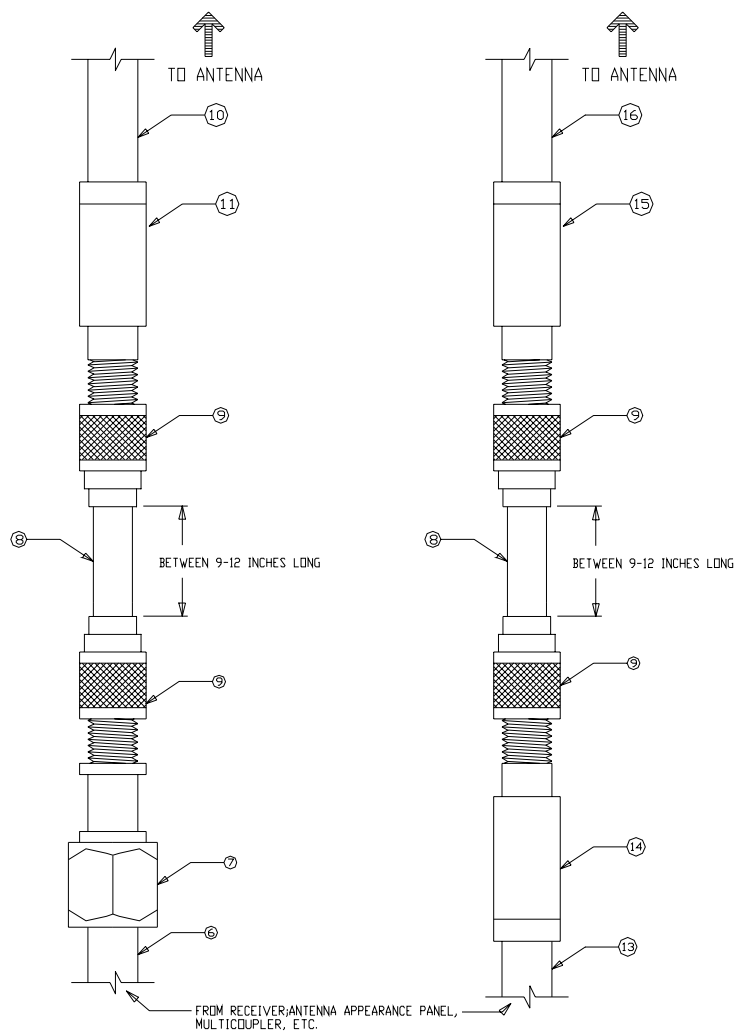
DRAFTSMAN  
C. C. Snellgrove  
CHECKER  
C. Smith  
ENGINEER  
R. S. Galus  
APPROVED  
D. Duff  
DRAWING CONTROL: # 050



TITLE  
SSVC-879-2  
Antenna Switch Power

SIZE  
C  
DATE ESTABLISHED  
28 FEB 87  
DRAWING NUMBER  
99-02-050

SCALE  
Full  
DATE  
2 JAN 97  
SHEET  
3 OF 3

FIG. 1 R.F. MAINTENANCE CABLING  
NOTE 1

## REQUIRED MATERIALS LIST

FIND #	LI	QTY	DESCRIPTION
1	6798	IF REQ	CLAMP HOSE
2	551	AS REQ	CABLE BRAIDED
3	845	2EA	CONNECTOR, SPLIT
4	7449	4EA	LUG TERMINAL
5	6300	AS REQ	#4 SOLDER BARE WIRE
6	6469	AS REQ	RG-331 CABLE
7	6470	2EA	N FEMALE CONNECTOR
8	544	AS REQ	RG-214 CABLE
9	357	2EA	N MALE CONNECTOR
10	5140	IF REQ	RG-233U
11	5141	IF REQ	N FEMALE END SEAL
12	6800	IF REQ	CLAMP HOSE
13	6344	AS REQ	CELLFLEX 1/2 INCH
14	6345	AS REQ	N FEMALE END SEAL 1/2
15	969	AS REQ	N FEMALE END SEAL 7/8
16	968	AS REQ	CELLFLEX 7/8 INCH
17	R440	AS REQ	ANTI-CORROSION COMPOUND

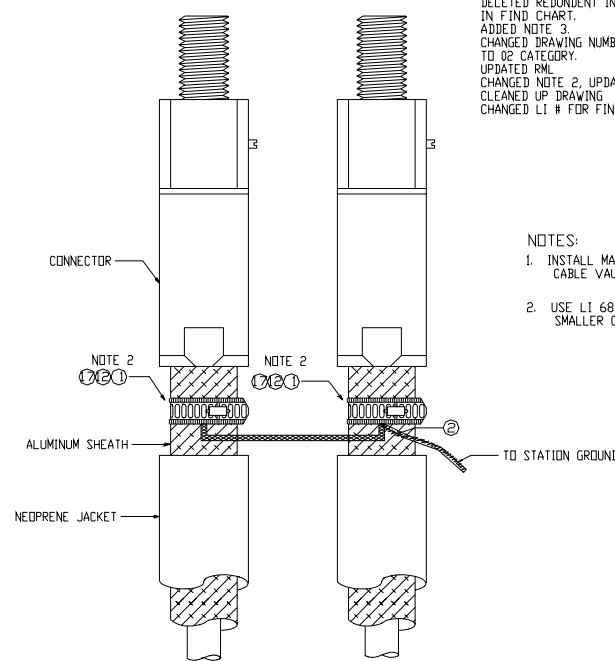


FIG. 2 GROUNDING RF CABLE VAULT

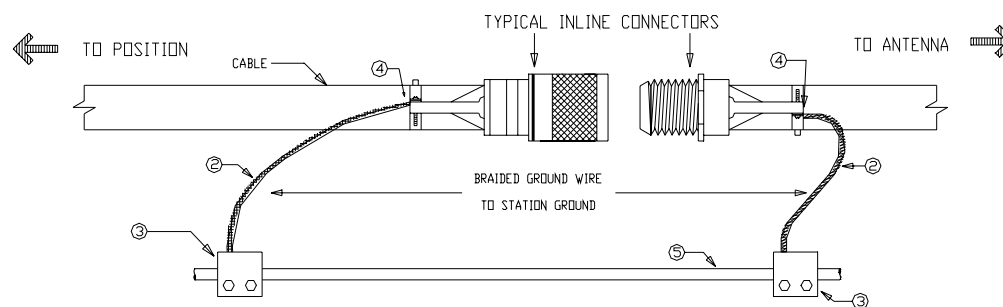


FIG. 3 GROUNDING MULTICONDUCTOR SHIELDED CONTROL CABLE

RG 232 NO LONGER REQUIRED.  
ADDED FIND 10,11,12.  
DELETED REDUNDANT INFORMATION  
IN FIND CHART.  
ADDED NOTE 3.  
CHANGED DRAWING NUMBER  
TO 02 CATEGORY.  
UPDATED RML  
CHANGED NOTE 2, UPDATED RML,  
CLEANED UP DRAWING  
CHANGED LI # FOR FIND 15 & 16

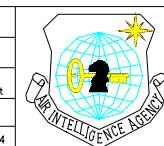
1 NOV 89 DJM  
27 MAY 92 PMS  
10 DEC 93 JLM

## NOTES:

1. INSTALL MAINTENANCE TEST CABLE IN THE CABLE VAULT BETWEEN RIGID COAXIAL CABLES.
2. USE LI 6800, 1/2" CLAMP FOR SMALLER CABLES.

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
J. L. Mohr  
CHECKER  
C. Smith  
ENGINEER  
Capt. Huth/P. E. Scott  
APPROVED  
D. Duff  
DRAWING CONTROL # 054



TITLE  
Antenna Cabling  
Cable Vault Details  
SIZE  
C  
DATE ESTABLISHED  
15 MAY 87  
DRAWING NUMBER  
99-02-054  
SCALE  
Full  
DATE  
10 DEC 93  
SHEET  
1 OF 3

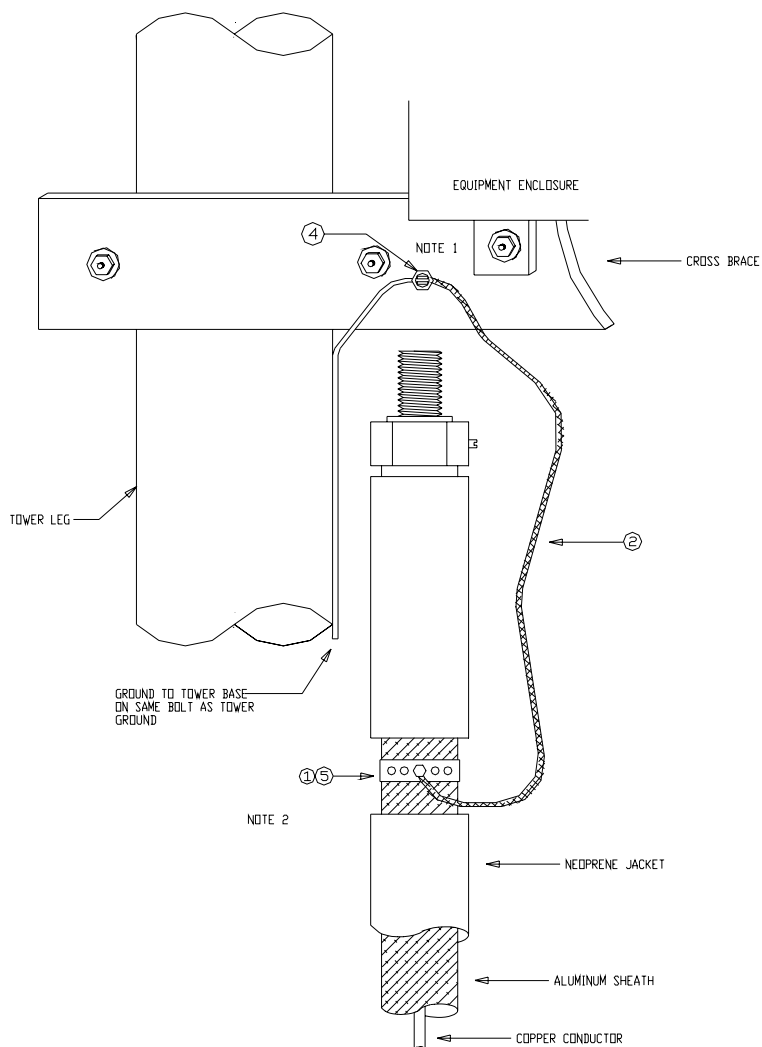
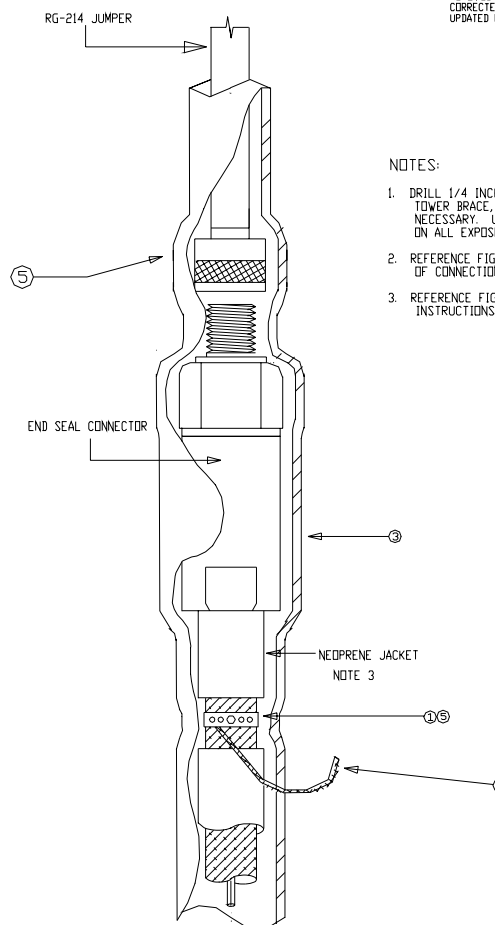


FIG.1 GROUNDING AT TOWER OR POLE

FIG.2 GROUNDING AND WEATHER PROOFING OF CABLE CONNECTIONS  
AT SPECIAL TEST ENCLOSURES (CABLE TO CABLE CONNECTION).

ADDED 571 5 JUL 89 WCD  
CHANGED DRAWING  
NO. TO 02  
CATEGORY 1 NOV 89 DJM  
DATE CHANGE 7 DEC 89 DJM  
ADDED FIND 5,6 19 MAR 90 DJM  
UPDATED RML 27 MAY 92 PMS  
REMOVED FIND 6  
CORRECTED DRAWING,  
UPDATED RML 10 DEC 93 JLM

## NOTES:

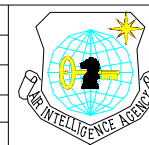
1. DRILL 1/4 INCH HOLES IN NEAREST TOWER BRACE. CENTER HOLE AS NECESSARY. USE SEALING COMPOUND ON ALL EXPOSED GROUND CONNECTIONS
2. REFERENCE FIGURE 2 FOR WEATHERPROOFING OF CONNECTIONS
3. REFERENCE FIGURE 1 FOR GROUND CLAMP INSTRUCTIONS AND ILLUSTRATION.

## REQUIRED MATERIALS LIST

FIND #	LI	QTY	DESCRIPTION
1	571	1EA	CLAMP GROUND AFCC CAT #8041
2	1091	FT AS REQ	WIRE 10 AWG YELLOW STRANDED
3	6160	FT AS REQ	SHRINK TUBING
4	393	1EA	SPLIT BOLT CONNECTOR WITH STUD
5	8440	1LB	ANTI-CORROSION COMPOUND

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
J. L. Mohr  
CHECKER  
C. Smith  
ENGINEER  
Capt. Huht/TSgt. Scott  
APPROVED  
D. Duff  
DRAWING CONTROL # 054



TITLE Antenna Cabling

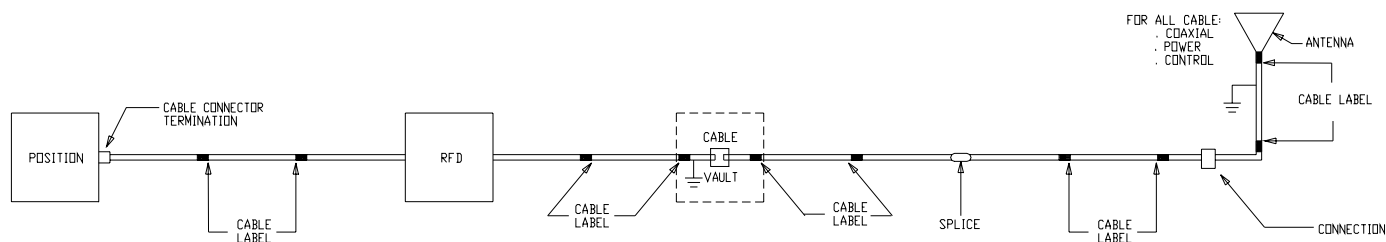
SIZE C DATE ESTABLISHED 15 MAY 87 DRAWING NUMBER 99-02-054

SCALE Full DATE 10 DEC 93 SHEET 2 OF 3

B054-3

CHANGED DRAWING NO. TO  
02 CATEGORY  
CHANGED TERMINATION POINT  
LABELS, REMOVED ERROR NOTE  
UPDATED RML

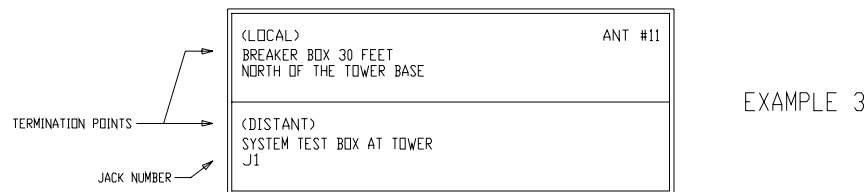
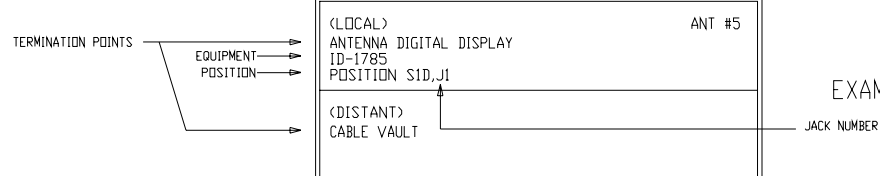
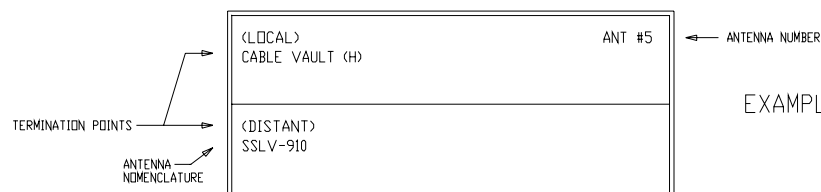
2 NOV 89 DJM  
10 DEC 93 JLM



## CABLE LABELING REQUIREMENTS

## NOTES:

1. INSTALL LABELS TWELVE INCHES FROM POSITIONS AND TWELVE INCHES FROM SPLICES.
2. REFERENCE T.O. 31-10-27 FOR LABELING INSTRUCTIONS.



## TYPICAL LABELING FORMAT

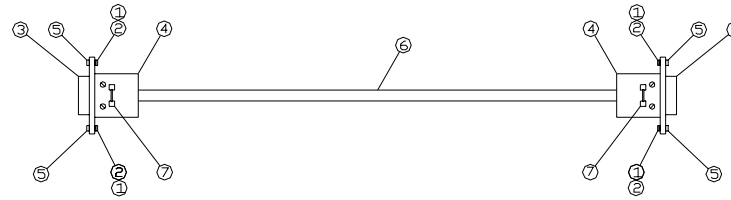
FIND #	LI	QTY	MATERIAL LIST
2241	AS REQ		CABLE LABEL, WRITE-ON

U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN J. L. Mohr CHECKER C. Smith ENGINEER Capt. Huth/P. E. Scott APPROVED D. Duff DRAWING CONTROL # 054		TITLE Antenna Cabling Cable Labeling Requirements SIZE C DATE ESTABLISHED 15 MAY 87 DRAWING NUMBER 99-02-054 SCALE Full DATE 10 DEC 93 SHEET 3 OF 3	

MOVED FROM CATEGORY 14

2 JAN 97 1MH

NOTE 1



ANTENNA MATRIX

1	BRN	↓	( )	1
2	BLK	↓		2
3	RED	↓		3
4	BLK	↓		4
5	DRG	↓		5
6	BLK	↓		6
7	YEL	↓		7
8	BLK	↓		8
9	GRN	↓		9
10	BLK	↓		10
11	BLU	↓		11
12	BLK	↓		12
13	WHT	↓		13
14	BLK	↓		14
15	RED	↓		15
16	WHT	↓		16
18	RED	↓		18
27	GRN	↓		27
37	RED	↓		37
35	BLU	↓		35
19	DRAIN WIRE	↓	( )	19

ANTENNA CONTROL UNIT

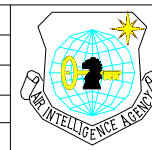
## NOTES

1. LENGTH AND EXACT TERMINATION DETERMINED BY INSTALLATION SCHEME.
2. CABLE IS NOT FEDERAL STOCK LISTED.

FIND NO.	DESCRIPTION	FSN OR L.I. NO.	QUANTITY
1	WASHER, LOCK #4	8229	4 EACH
2	WASHER, FLAT #4	5310-00-595-6211	4 EACH
3	CONN, DCM-37P	5935-00-988-5587	2 EACH
4	BACKSHELL, DC-110963-4	5935-01-082-2091	2 EACH
5	LATCH, D110280	5340-00-155-5234	4 EACH
6	CABLE, BELDEN 9510	NOTE 2	AS REQUIRED
7	TY-RAP	157	2 EACH

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
Brewer  
CHECKER  
R. S. Galus  
ENGINEER  
D. E. Boone  
APPROVED  
D. Duff  
DRAWING CONTROL # 058



TITLE  
AN/FRD-13  
Matrix to Antenna Control  
Unit Cable  
SIZE  
C  
DATE ESTABLISHED  
31 MAR 88  
DRAWING NUMBER  
99-02-058  
SCALE  
Full  
DATE  
2 JAN 97  
SHEET  
1 OF 1

MOVED FROM CATEGORY 3 AND UPDATE NOTES

2 JAN 97 TMH

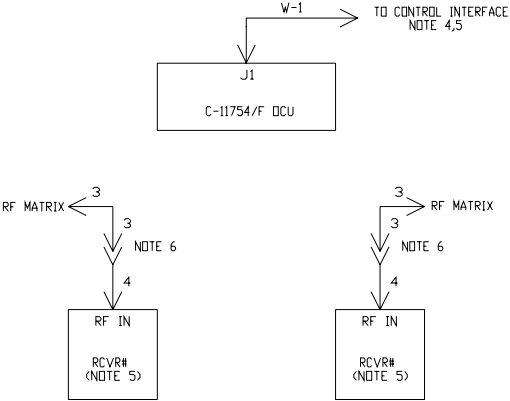


FIG. A  
(1) TYPE CONFIGURATION  
SEE FLR-9(1) IN RML DIRECTORY

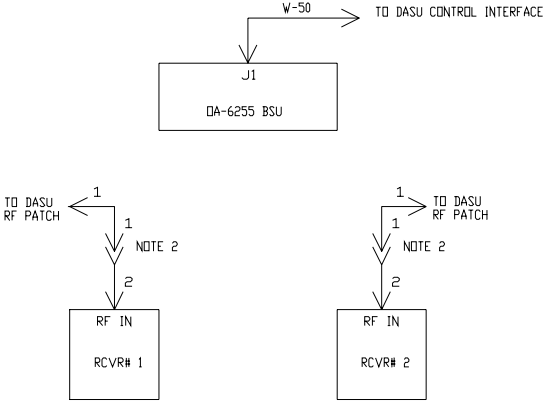


FIG. B  
(3) TYPE CONFIGURATION  
SEE FLR-9(3) IN RML DIRECTORY

- NOTES:
- FIGURES A AND B DEPICT THE SIGNAL FLOW FOR THOSE RECEIVERS CONTROLLED BY BEAM SELECTORS.
  - FOR RECEIVER R-1828, USE ADAPTER (LI 00233). FOR RECEIVER R-2174, USE ADAPTER (LI 01068). FOR RECEIVER R-1414, NO ADAPTER IS NEEDED.
  - SEE 99-02-343 FOR PINNING INSTRUCTIONS ON CONTROL CABLES. CABLE ASSEMBLY WILL BE A FAB ITEM.
  - DCU IS CAPABLE OF ACCOMMODATING UP TO 16 RECEIVERS.
  - FOR RECEIVER R-1828, USE ADAPTER (LI 00229). FOR RECEIVER R-2174, USE ADAPTER (LI 00239) IN SHORT DEPTH RACKS ONLY. FOR RECEIVER R-1414, USE CONNECTOR (LI 00342) WITHOUT ADAPTER.

LEGEND

- \* CABLE AND CONNECTOR FURNISHED WITH EQUIPMENT
- CABLE WITH CONNECTOR
- CONNECTOR ADAPTER

NO.	CABLE P/N	LI NO.	CONNECTOR P/N	LI NO.	BACKSHELL P/N	LI NO.
1.	RG-216	00540	C-TYPE	00327		
2.			C TO BNC ADAPT.	00233		NOTE 2
			90 C TO N ADAPT.	01068		NOTE 2
3.	RG-214	00544	N-TYPE	00357		
4.			90 N TO N ADAPT.	00239		NOTE 6
			N TO BNC ADAPT.	00229		NOTE 6
			C-TYPE	00342		NOTE 6

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
J. W. Lacy

CHECKER  
D. J. Moore

ENGINEER  
J. W. Lacy

APPROVED  
D. Duff

DRAWING CONTROL # 231

TITLE  
AN/FLR-9 Beam  
Selector Signal Flow

SIZE  
C

DATE ESTABLISHED  
20 FEB 75

DRAWING NUMBER  
99-02-231

SCALE  
Full

DATE  
2 JAN 97

SHEET  
1 OF 1

CHANGED FIG 2 & FIND 11 28APR92 CCS  
 MOVED FROM CATEGORY 3  
 COMBINED WITH 99-14-393 6 JAN 97 TMH

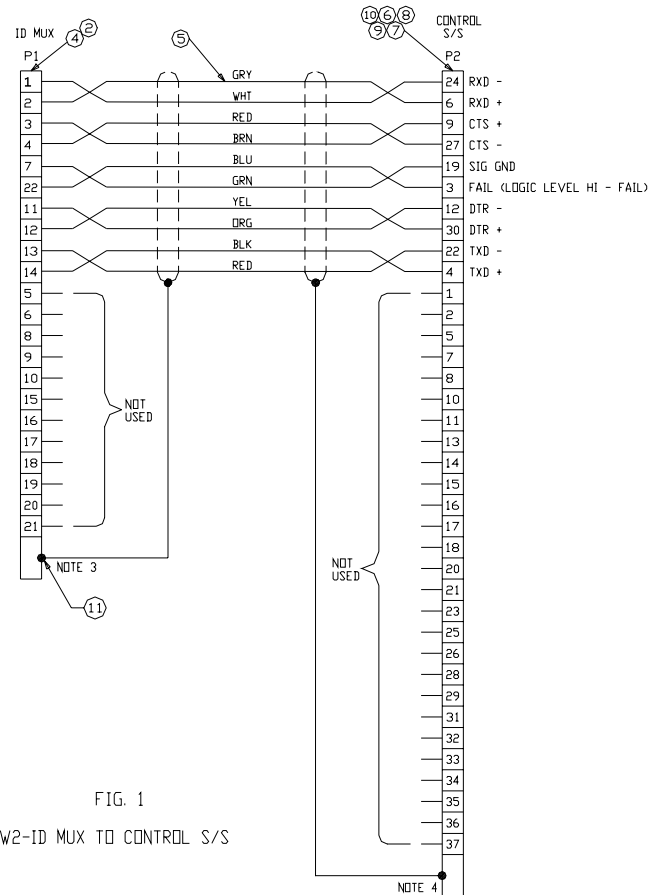


FIG. 1  
 W2-ID MUX TO CONTROL S/S

## REQUIRED MATERIAL LIST

FIND NO.	LI NO.	DESCRIPTION	QTY IDMUX TO OCU	QTY S/S TO IDMUX	REMARKS
1.	6411	CONN PLUG MS2746T13F-35SB	1 EA	1 EA	
2.	6412	BACK SHELL M3899916-12B05	2EA	1 EA	
3.	531	CABLE 12P22T17EPSP	AS REQ. FT	N/A	NOTE 5
4.	6413	CONN PLUG MS2746T13F-35P	1 EA	N/A	
5.	6414	CABLE BELDEN 9893	N/A	AS REQ. FT	
6.	6415	RECEPTACLE AMP 205209-1	N/A	1 EA	
7.	6416	HOOD, SHIELDED AMP 745174-3	N/A	1 EA	
8.	6417	CONTACT, SOCKET AMP 66504-9	N/A	10 EA	
9.	6419	RETAINER (CLIP & SCREW)	N/A	1 PG	
10.	6420	FERRULE, SPLIT RING	N/A	1 EA	
11.	1324	TERMINAL LUG	1 EA	1 EA	
12.	8324	WIRE GREEN 22AWG	N/A	0.5 FT	

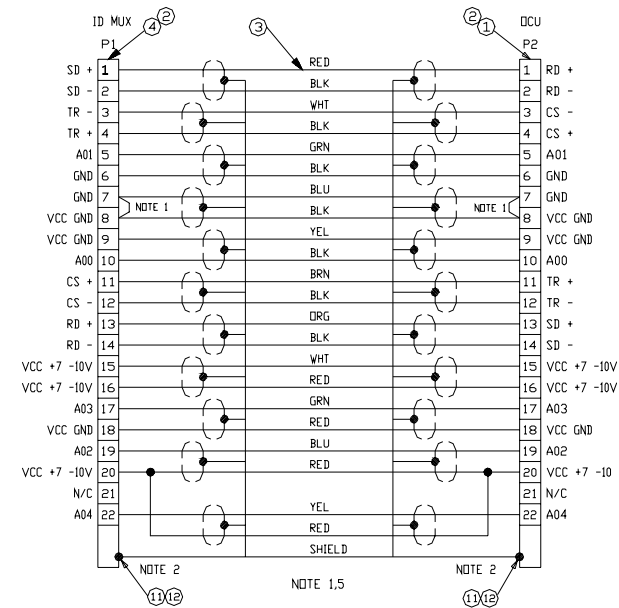


FIG. 2  
 W1-ID MUX TO OCU

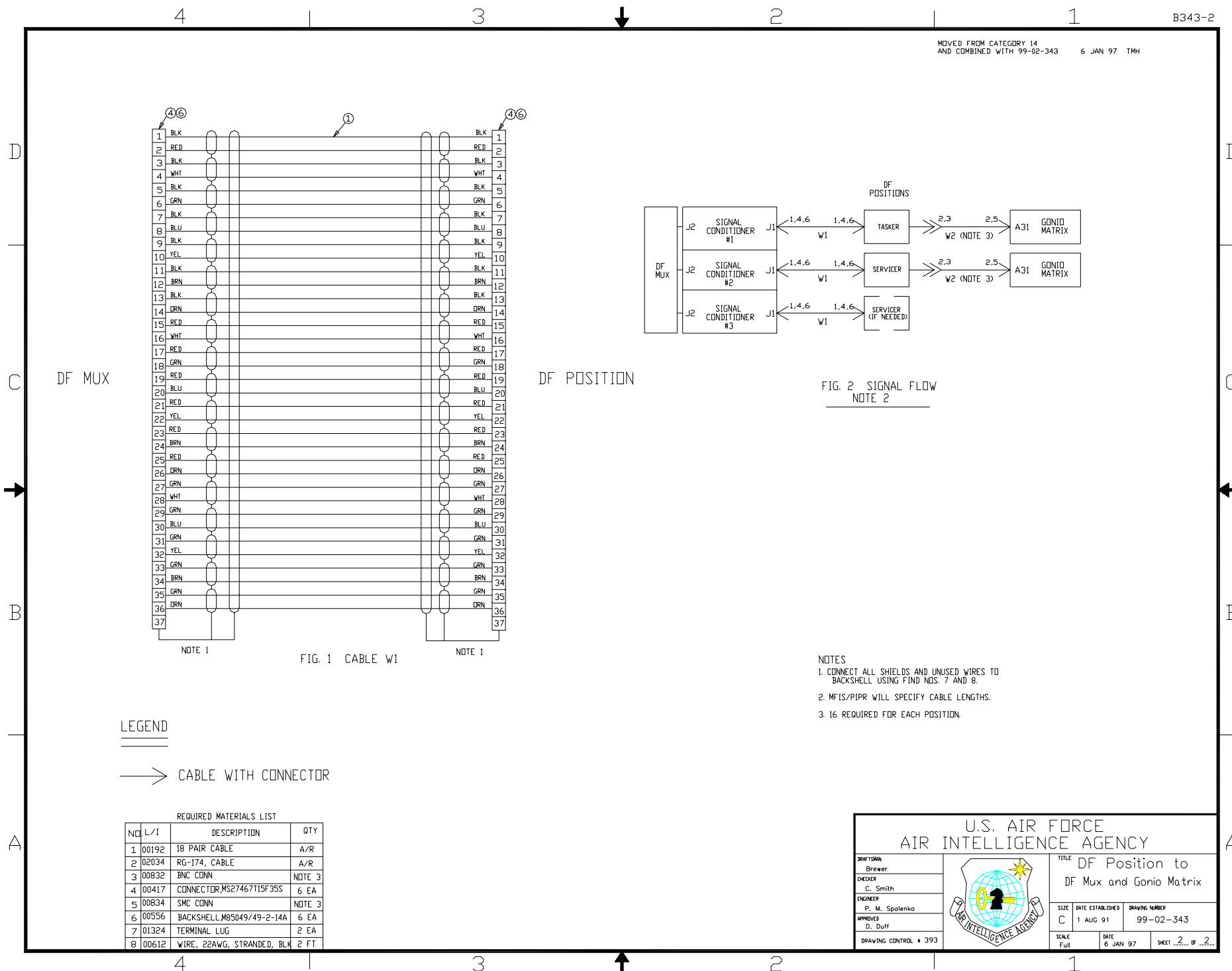
## NOTES:

1. CABLES MORE THAN 500 FT IN LENGTH REQUIRE RED CONDUCTOR OF RED/YEL PAIR CONNECTED AND PINS 7 AND 8 ARE TIED TOGETHER AT BOTH ENDS AS SHOWN. CABLES LESS THAN 500 FT IN LENGTH DO NOT REQUIRE RED CONDUCTOR OF RED/YEL PAIR AND PINS 7 AND 8 ARE NOT TIED TOGETHER.
2. TWIST UNUSED PAIR AND ALL DRAIN WIRES TOGETHER AND SOLDER TO GREEN WIRE. FIELD GREEN WIRE BACK THROUGH CABLE CLAMP AND GROUND TO CABLE CLAMP USING TERMINAL LUG.
3. GROUND SHIELD TO BACKSHELL USING TERMINAL LUG UNDER CLAMP SCREW.
4. SHIELD IS INTERNALLY CONNECTED TO EMI/RFI BACKSHELL.
5. CONTACT STANDARDS IF COLOR CODE IS DIFFERENT.

DRAFTSMAN Brewer		TITLE ID MUX to OCU and Control S/S Cables	
CHECKER D. J. Moore		DATE ESTABLISHED 1 NOV 85	
ENGINEER R. S. Gulas		DRAWING NUMBER 99-02-343	
APPROVED D. Duff		SCALE Full	DATE 6 JAN 97
DRAWING CONTROL # 343		SHEET 1 OF 2	



B343-2

MOVED FROM CATEGORY 14  
AND COMBINED WITH 99-02-343 6 JAN 97 TMH

4

3

2

1

B374-1

CORRECTED LINE ITEM DISCREPANCIES  
AND ADDED NOTE 2: 13 MAR 92 TFR  
ADDED FIND NUMBER 28: 30 NOV 94 PMS  
ADDED FIND NUMBER 29: 22 AUG 95 PMS  
CHANGED NOTE 1 & DELETE NOTE 2 06 JAN 97 TMH

NO.	CABLE P/N	LI NO	CONNECTOR P/N	LI NO	BACKSHELL P/N	LI NO	BUSHING
1.	RG-333	5140	N-FEMALE	5141			
2.	RG-331	6469	N-FEMALE	6470			
3.	RG-214	544	N-MALE	357			
4.	RG-214	544	C-MALE	342			
5.	BELDEN 83709	44	M83723-24R2820N	1418	M83723-35S-28	759	
6.	BELDEN 83709	44	MS3451W28-20S	88	MS3417-28N	759	
7.	BELDEN 83719	5046	MS3456W28-11P	5038	MS3417-28N	759	
8.	BELDEN 83719	5046	M83723-24R2820N	1418	M83723-35S-28	752	
9.	35549	6219	MS3456L28-20S	6234	MS3417-28N	759	
10.	35549	6219	M83723-24R2820N	1418	M83723-35S-28	752	
11.	BELDEN 83752	847	MS3106A-20-23P	6441	MS3417-20N	711	
12.	BELDEN 83719	5046	MS3451W28-20S	88	MS3417-28N	759	
13.	BELDEN 83752	847	MS3451W20-23S	846	MS3417-20N	711	
14.	BELDEN 83709	44	MS3106R22-23P	848	MS3417-22N	215	783
15.	BELDEN 83709	44	P408-CCT	5043			
16.	BELDEN 83709	44	MS3451W22-20S	844	MS3417-22N	215	783
17.	BELDEN 83709	44	MS3456W22-20P	6442	MS3417-22N	215	783
18.	BELDEN 83719	5046	MS3451W22-20S	844	MS3417-22N	215	783
19.	BELDEN 83719	5046	MS3456W22-20P	6442	MS3417-22N	215	783
20.	BELDEN 89880	6878	MS3451W10SL3P	853	MS3418-10N	353	
21.	BELDEN 83719	5046	MS3451W28-11S	5039	MS3417-28N	759	
22.	BELDEN 83719	5046	M83723-23R2811N	2032	M83723-35S-28	752	
23.	RG-223/U	383	MS3456W10SL3S	354	MS3418-10N	353	
24.	BELDEN 89880	6878	MS3456W10SL3S	354	MS3418-10N	353	
25.	BELDEN 83709	44	MS3106R22-23S	849	MS3417-22N	215	
26.	CELLFLEX 7/8 INCH *	968	738842	969			
27.	CELLFLEX 1/2 INCH *	6344	L44N	6345			
28.	BELDEN 8777	559	DB25P	1064	745173-1	57	
29.	24AWG25P	201	DB37M	6884	745174-4	6885	

## NOTES:

- \* CELLFLEX 7/8 INCH IS REPLACEMENT OF CHOICE FOR RG-333. CELLFLEX 1/2 INCH REPLACES RG-331. USE THESE REPLACEMENTS FOR ALL FUTURE PROJECTS.
1. THIS CABLE/CONNECTOR LEGEND APPLIES TO ANTENNA DRAWINGS 99-02-374, 375, 376, 377, 378, 379, 380, 381, AND 382

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AIR INTELLIGENCE AGENCY

DRAFTSMAN  
D J Moore  
CHECKER  
R S Galus  
ENGINEER  
D J Moore  
APPROVED  
D. Duff  
DRAWING CONTROL # 374



TITLE  
Antenna Control  
Cables  
Find Details  
SIZE  
C  
DATE ESTABLISHED  
1 NOV 89  
DRAWING NUMBER  
99-02-374  
SCALE  
Full  
DATE  
6 JAN 97  
SHEET  
1 OF 3

B374-2

BBH-160

ROTATOR CONTROL CABLE

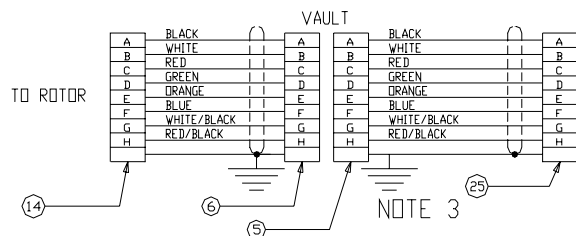


FIG. 1

LP-1013

LPM-3030

ROTATOR CONTROL CABLE

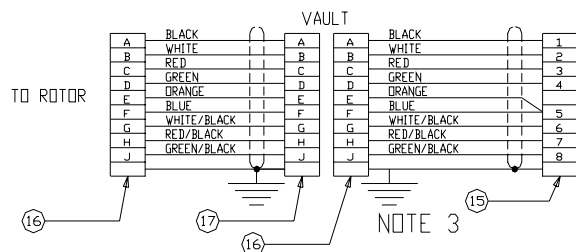


FIG. 2

SSLV-82 ROTATOR CONTROL CABLE

SSAR 712-2

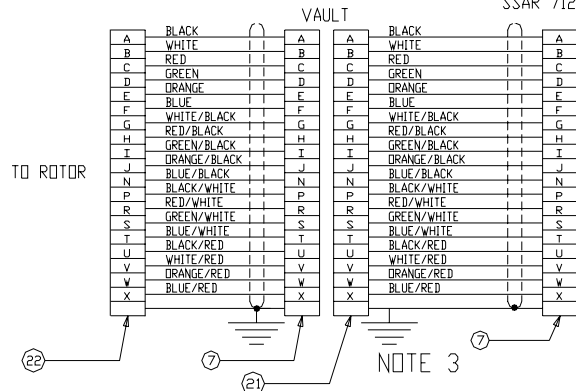


FIG. 3

BBH-160

POWER SUPPLY CABLE

VAULT

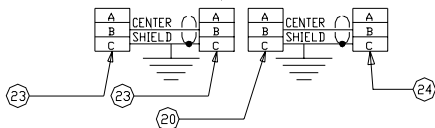


FIG. 4

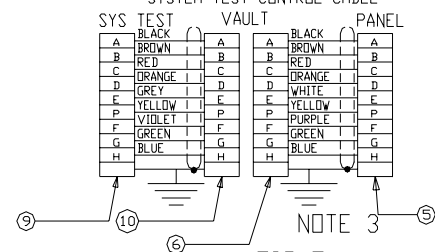
ALL TEST BOXES  
SYSTEM TEST CONTROL CABLE

FIG. 5

SSLV-38 ROTATOR CONTROL CABLE

SSLV-77

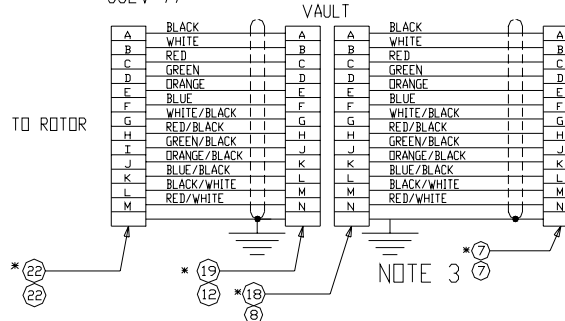


FIG. 6

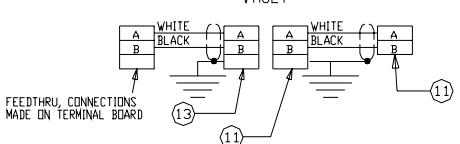
\* TOP NUMBERS FOR SSLV-38  
BOTTOM NUMBERS FOR SSLV-77SSLV-77  
POLARIZATION CONTROL CABLE  
VAULT

FIG. 7

CORRECTED FIND NUMBERS.  
ADDED RED/WHITE WIRE  
CONNECTED GROUND WIRES ON FIGS  
12, 35, 6 AND CHANGED NOTE 3.  
ADDED FIG. 8  
MOVED FIG. 8 TO SHEET 319 MAR 90 DJM  
19 MAR 90 DJM  
13 MAR 92 TRR  
30 NOV 94 PMS  
22 AUG 95 PMS

## NOTES:

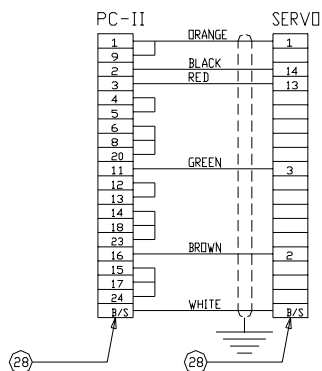
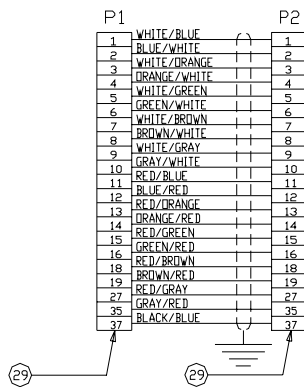
1. SEE 99-02-054 FOR GENERAL CABLING DETAILS.
2. SEE SHEET 1 FOR MATERIALS FIND NUMBER LIST.
3. GROUND ALL UNUSED CONDUCTORS WITH CABLE SHIELDS.
4. CONNECT DRAINS TO BACKSHELL (B/S) ON BOTH ENDS.

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
D. J. Moore  
CHECKER  
R. S. Galus  
ENGINEER  
D. J. Moore  
APPROVED  
D. Duff  
DRAWING CONTROL \* 374



TITLE  
Antenna Control  
Cables  
Pinning Details  
SIZE  
C  
DATE ESTABLISHED  
1 NOV 89  
DRAWING NUMBER  
99-02-374  
SCALE  
Full  
DATE  
22 AUG 95  
SHEET  
2 OF 3

RS-232 ANTENNA POSITIONER  
CONTROL CABLEFIG 8  
NOTE 4WSC-3 ANTENNA POSITIONER  
CONTROL CABLEFIG 9  
NOTE 5

## NOTES:

1. SEE 99-02-054 FOR GENERAL CABLING DETAILS.
2. SEE SHEET 1 FOR MATERIALS FIND NUMBER LIST.
3. GROUND ALL UNUSED CONDUCTORS WITH CABLE SHIELDS.
4. CONNECT DRAINS TO BACKSHELL (B/S) ON BOTH ENDS.
5. ALL UNUSED WIRES ARE CLIPPED.

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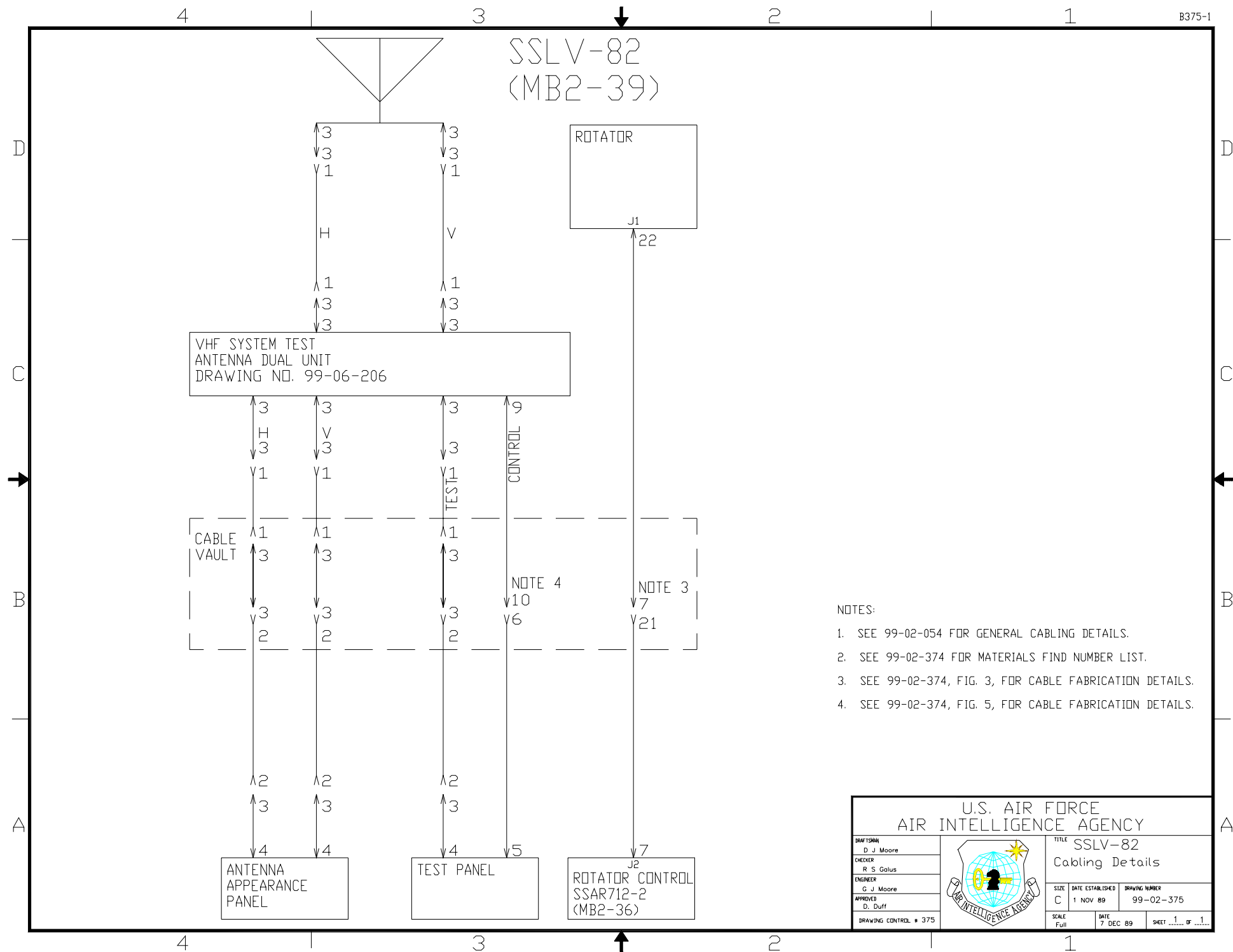
DRAFTSMAN  
P. M. Spalenka  
CHECKER  
J. J. Grant  
ENGINEER  
P. M. Spalenka  
APPROVER  
D. Duff  
DRAWING CONTROL # 374



TITLE  
Antenna Control  
Cables  
Pinning Details

SIZE  
C  
DATE ESTABLISHED  
22 AUG 95  
DRAWING NUMBER  
99-02-374

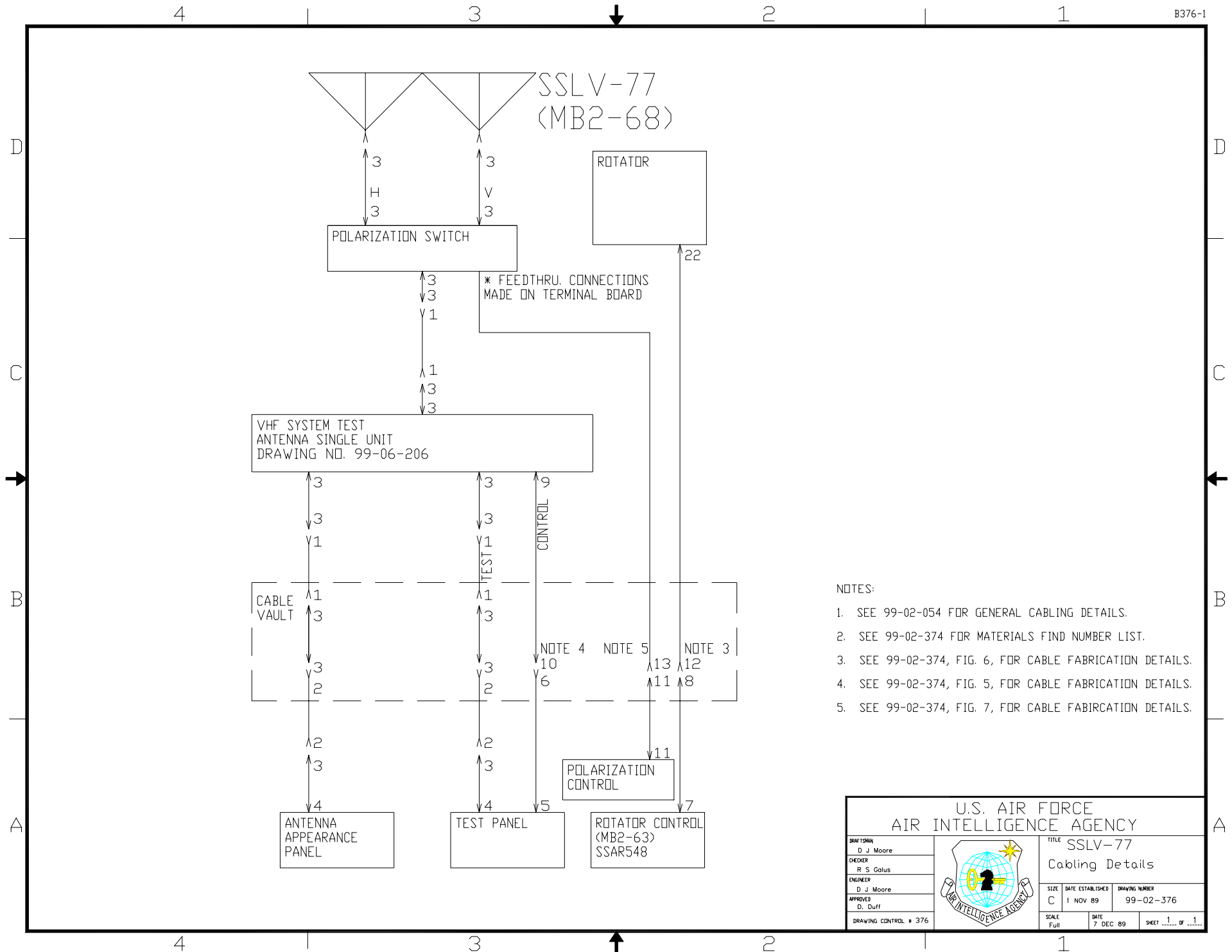
SCALE  
Full  
DATE  
22 AUG 95  
SHEET  
3 OF 3



## NOTES:

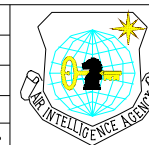
- SEE 99-02-054 FOR GENERAL CABLING DETAILS.
- SEE 99-02-374 FOR MATERIALS FIND NUMBER LIST.
- SEE 99-02-374, FIG. 3, FOR CABLE FABRICATION DETAILS.
- SEE 99-02-374, FIG. 5, FOR CABLE FABRICATION DETAILS.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE SSLV-82 Cabling Details	
DRAFTSMAN D J Moore	CHECKER R S Galus	ENGINEER G J Moore	APPROVER D. Duff
DRAWING CONTROL # 375		SCALE Full	DATE 7 DEC 89
		SHEET 1 OF 1	



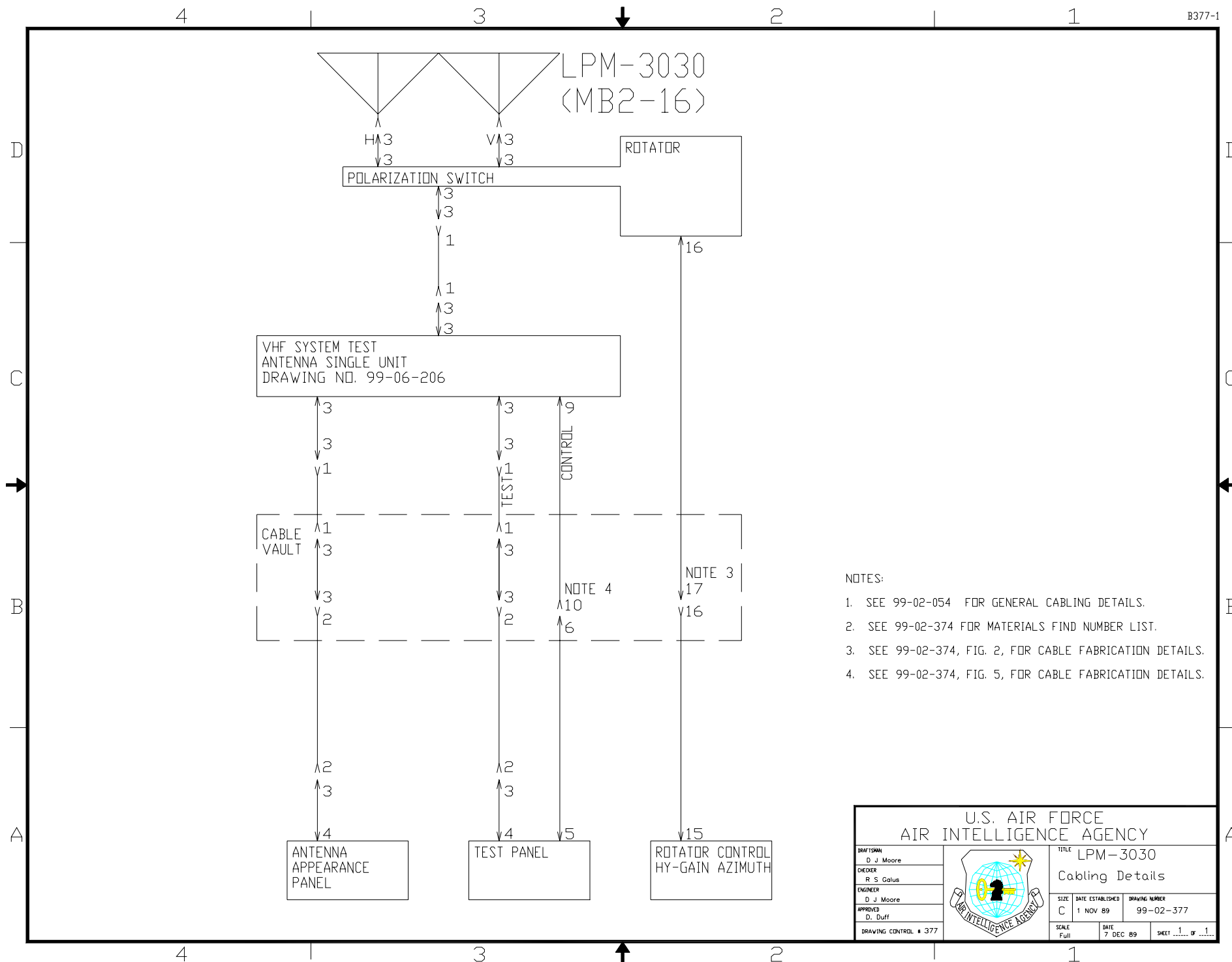
U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
D. J. Moore  
CHECKER  
R. S. Galus  
ENGINEER  
D. J. Moore  
APPROVES  
D. Duff  
DRAWING CONTROL # 376

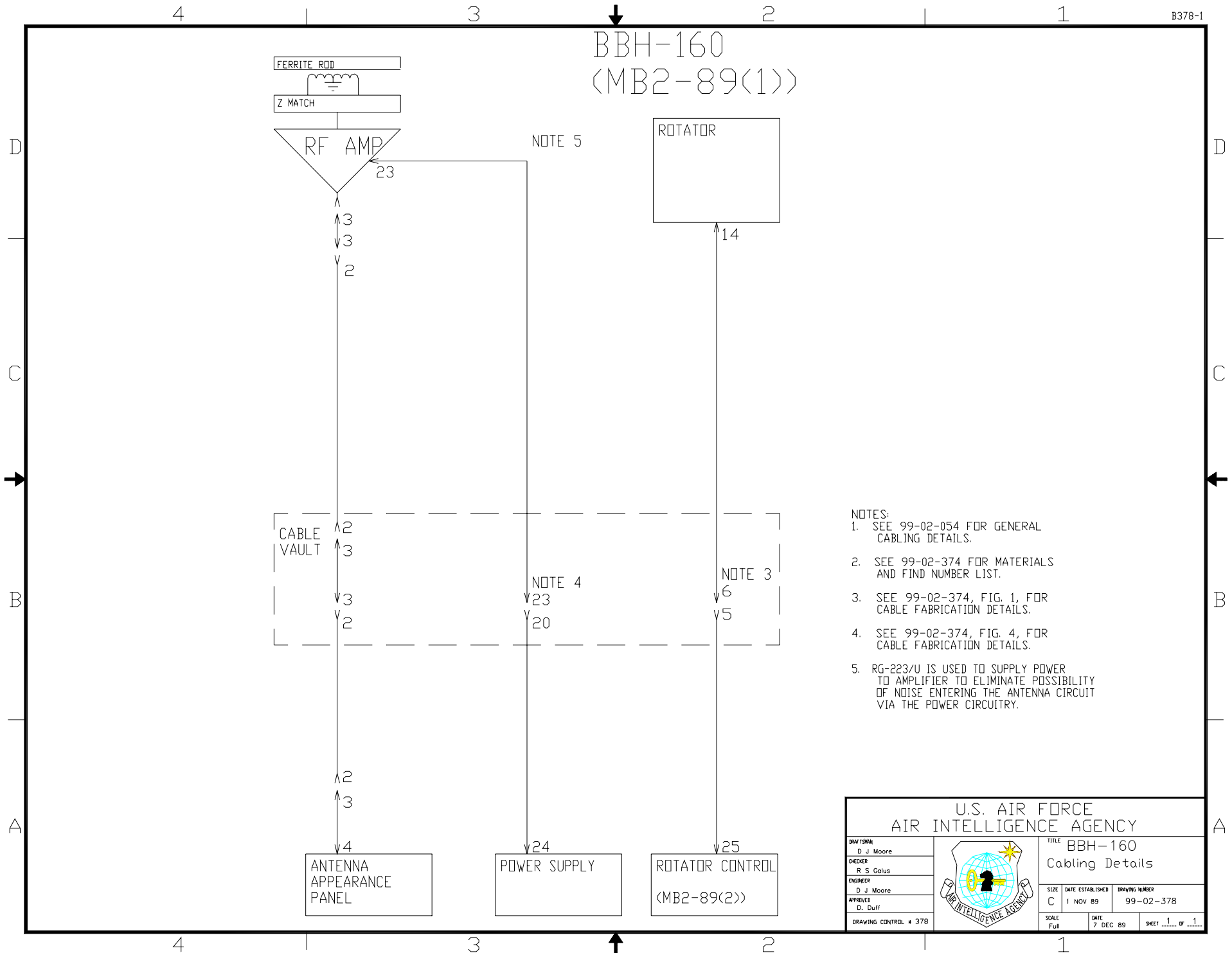


TITLE  
SSLV-77  
Cabling Details

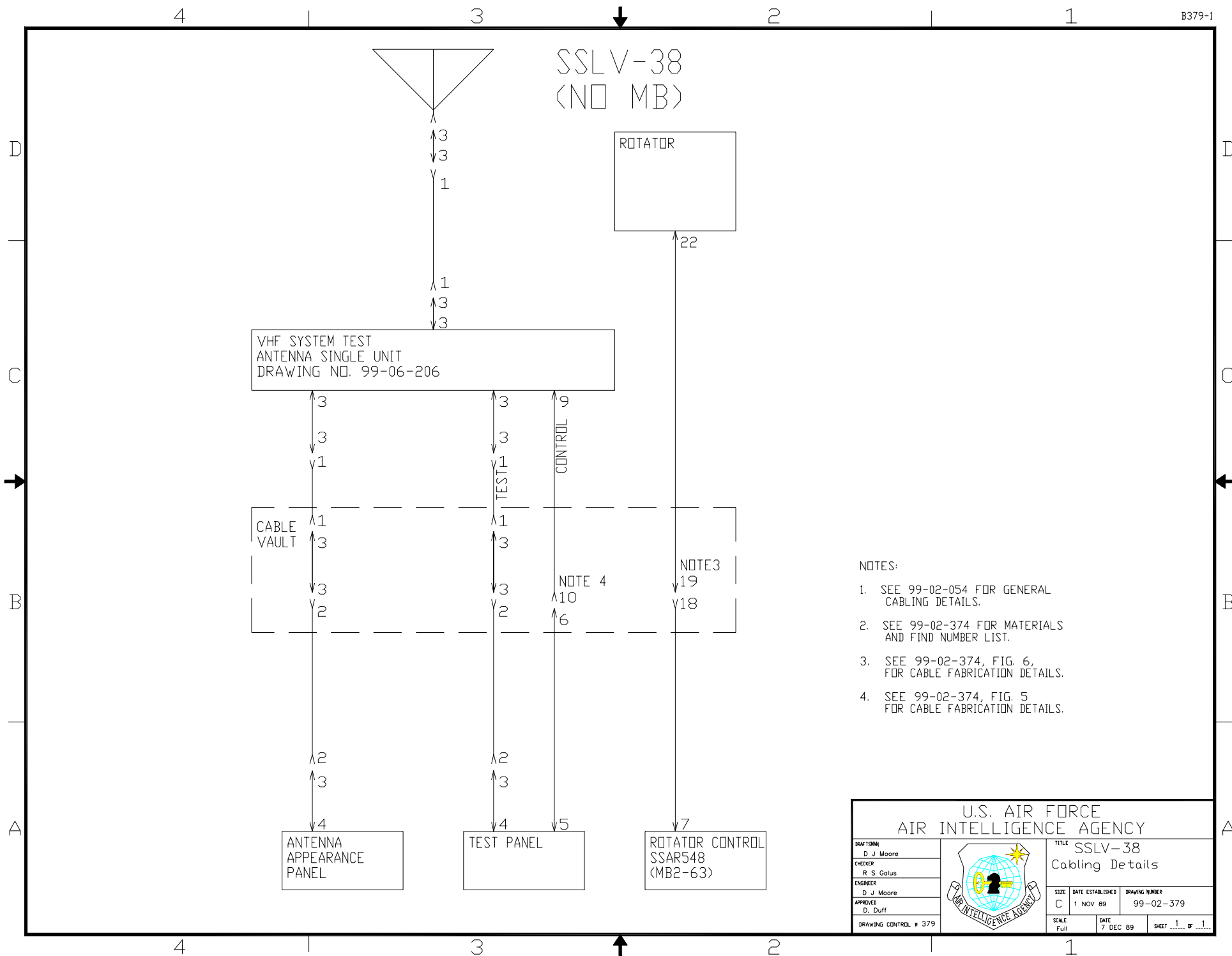
SIZE C	DATE ESTABLISHED 1 NOV 89	DRAWING NUMBER 99-02-376
SCALE Full	DATE 7 DEC 89	SHEET 1 OF 1

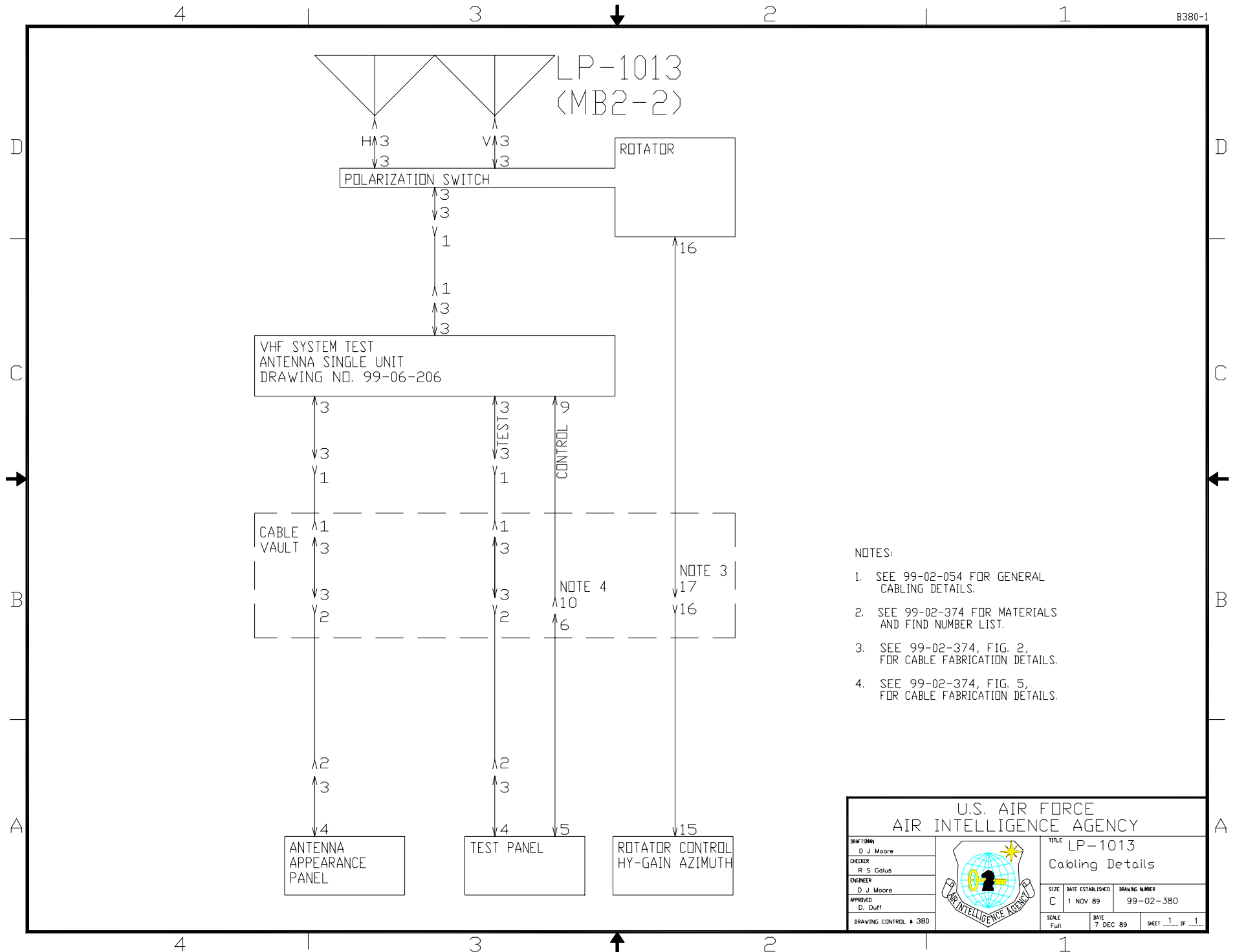


B378-1

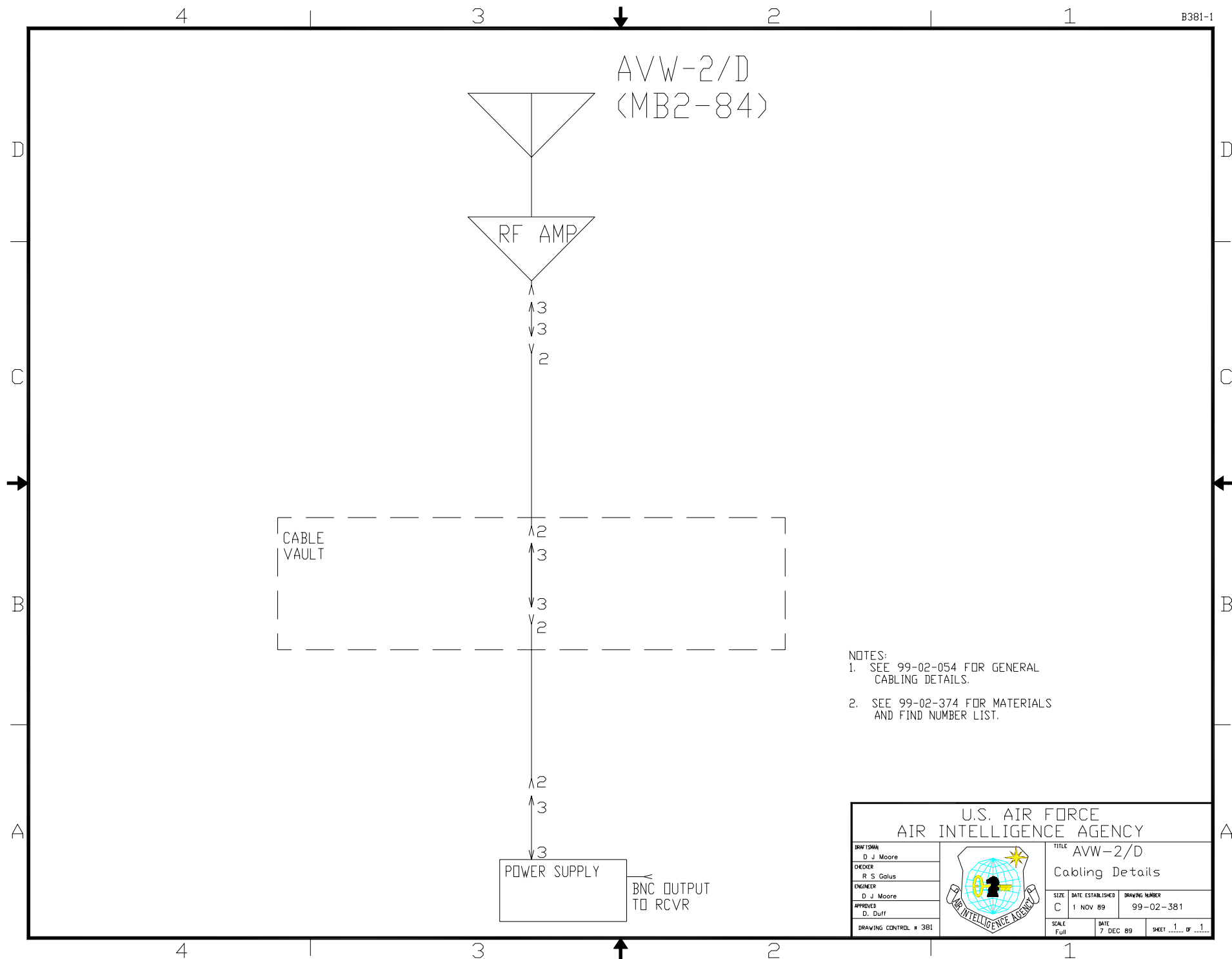


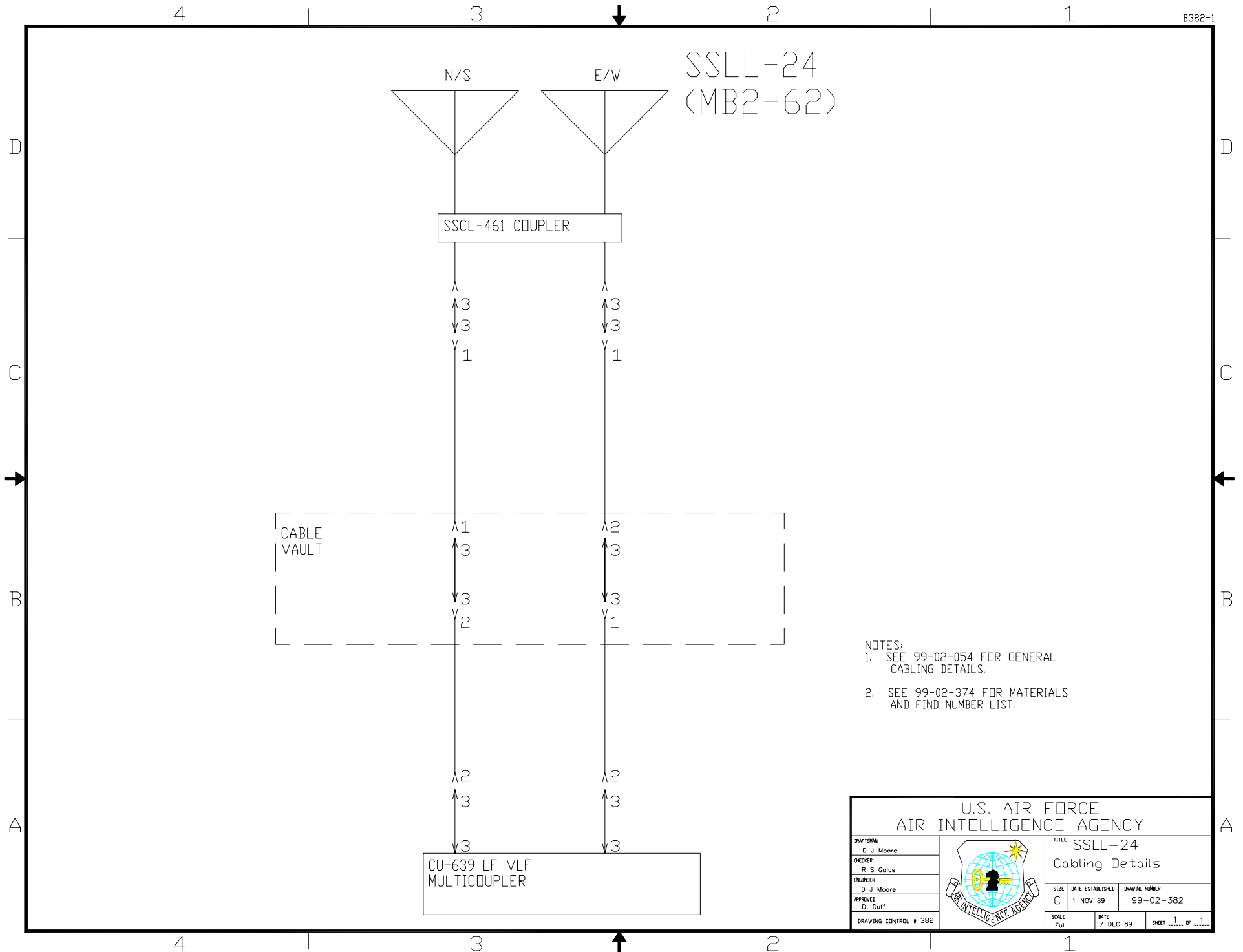







U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
<b>DRAFTSMAN</b> D J Moore <b>CHECKER</b> R S Galus <b>ENGINEER</b> D J Moore <b>APPROVED</b> D. Duff <b>DRAWING CONTROL</b> # 380		<b>TITLE</b> LP-1013 Cabling Details <b>SIZE</b> C <b>DATE ESTABLISHED</b> 1 NOV 89 <b>DRAWING NUMBER</b> 99-02-380 <b>SCALE</b> Full <b>DATE</b> 7 DEC 89 <b>SHEET</b> 1 of 1	





- NOTES:
1. SEE 99-02-054 FOR GENERAL CABLING DETAILS.
  2. SEE 99-02-374 FOR MATERIALS AND FIND NUMBER LIST.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN D. J. Moore CHECKER R. S. Galus ENGINEER D. J. Moore APPROVED D. Duff DRAWING CONTROL # 382		 TITLE SSL-24 Cabling Details	
SIZE C	DATE ESTABLISHED 1 NOV 89	DRAWING NUMBER 99-02-382	
SCALE Full	DATE 7 DEC 89	SHEET 1 OF 1	

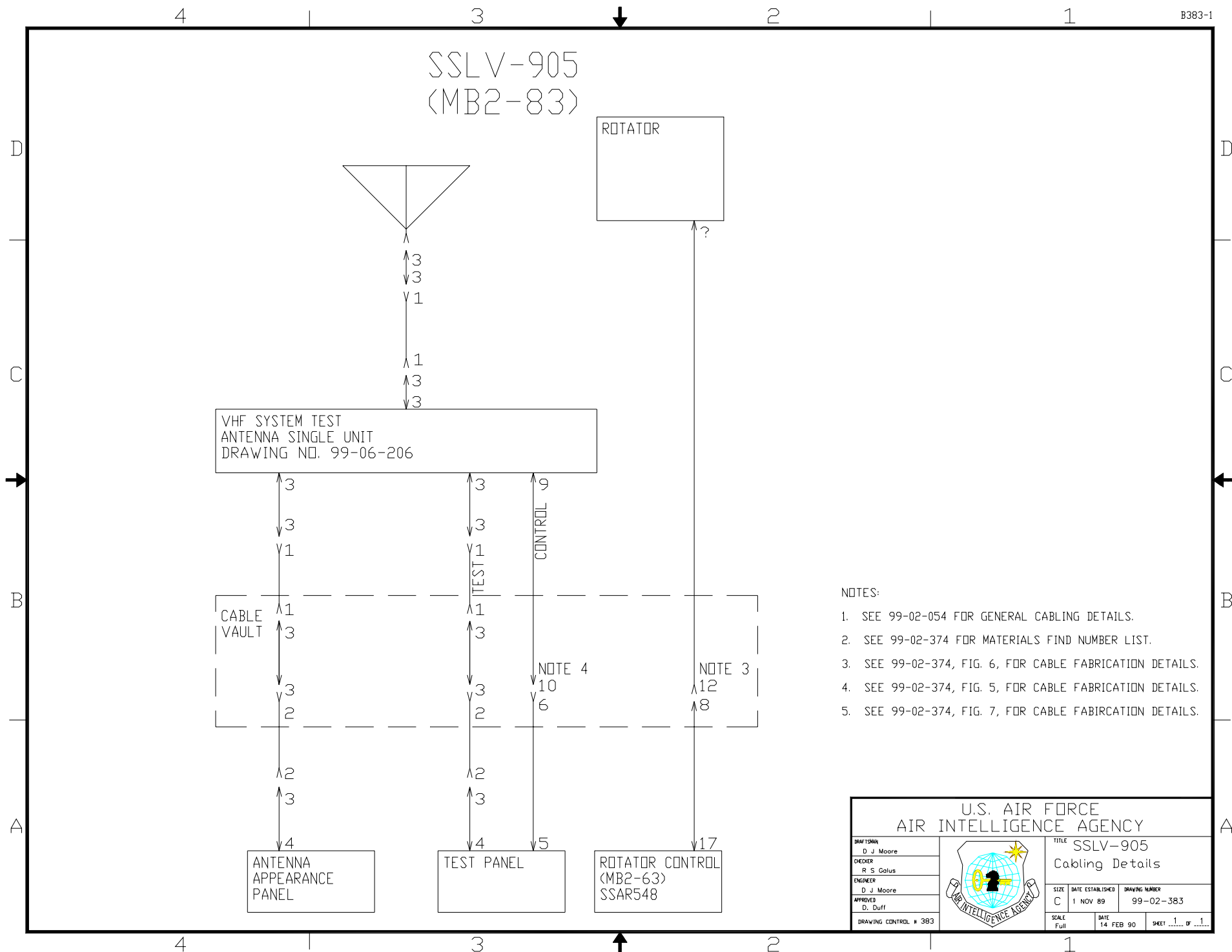


FIGURE 1

CHANGED STAND-ALONE ON FIG 2  
ADDED SHEET 5  
MOVED FROM CATEGORY 16

18 APR 94  
25 APR 94  
6 JAN 97

REM  
TRR  
TMH

## NOTES:

- FIG 1 REPRESENTS TYPICAL GROUND GRID AND CABINET ANCHORING TO REAL FLOOR BELOW THE RAISED FLOOR. SEE THE FOLLOWING SHEETS FOR DETAILS AND MATERIALS.
- FIG 2 REPRESENTS TYPICAL ANCHORING POINTS FOR CABINETS (REF. T.O. 13-10-29).

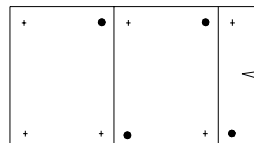
RAISED FLOOR PANELS

EQUIPMENT  
CABINETSRAISED FLOOR  
PEDESTALSANCHORING GRID  
SECURED TO  
FLOOR

NOTE 1

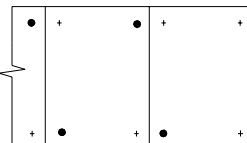
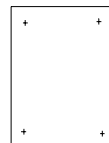
FIGURE 2

NOTE 2



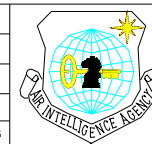
ANCHORING POINTS FOR CABINETS IN A ROW

- + INDICATES STUD OR BOLT
- INDICATES UNUSED HOLE

ANCHORING POINTS FOR  
STAND-ALONE CABINETS

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

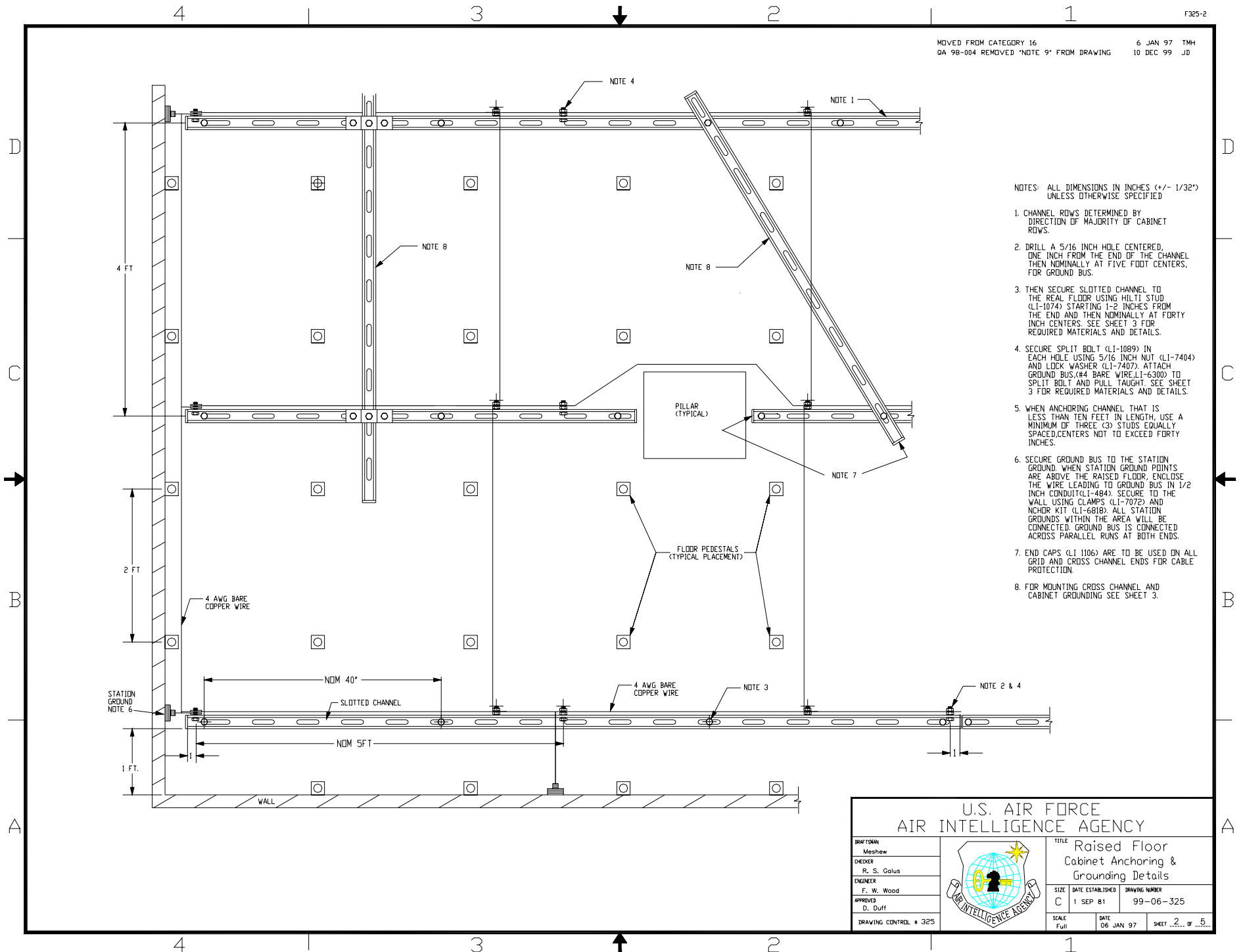
DRAFTSMAN  
Meshew  
CHECKER  
R. S. Galus  
ENGINEER  
F. W. Wood  
APPROVED  
D. Duff  
DRAWING CONTROL # 325



TITLE  
Raised Floor  
Cabinet Anchoring Details -  
General

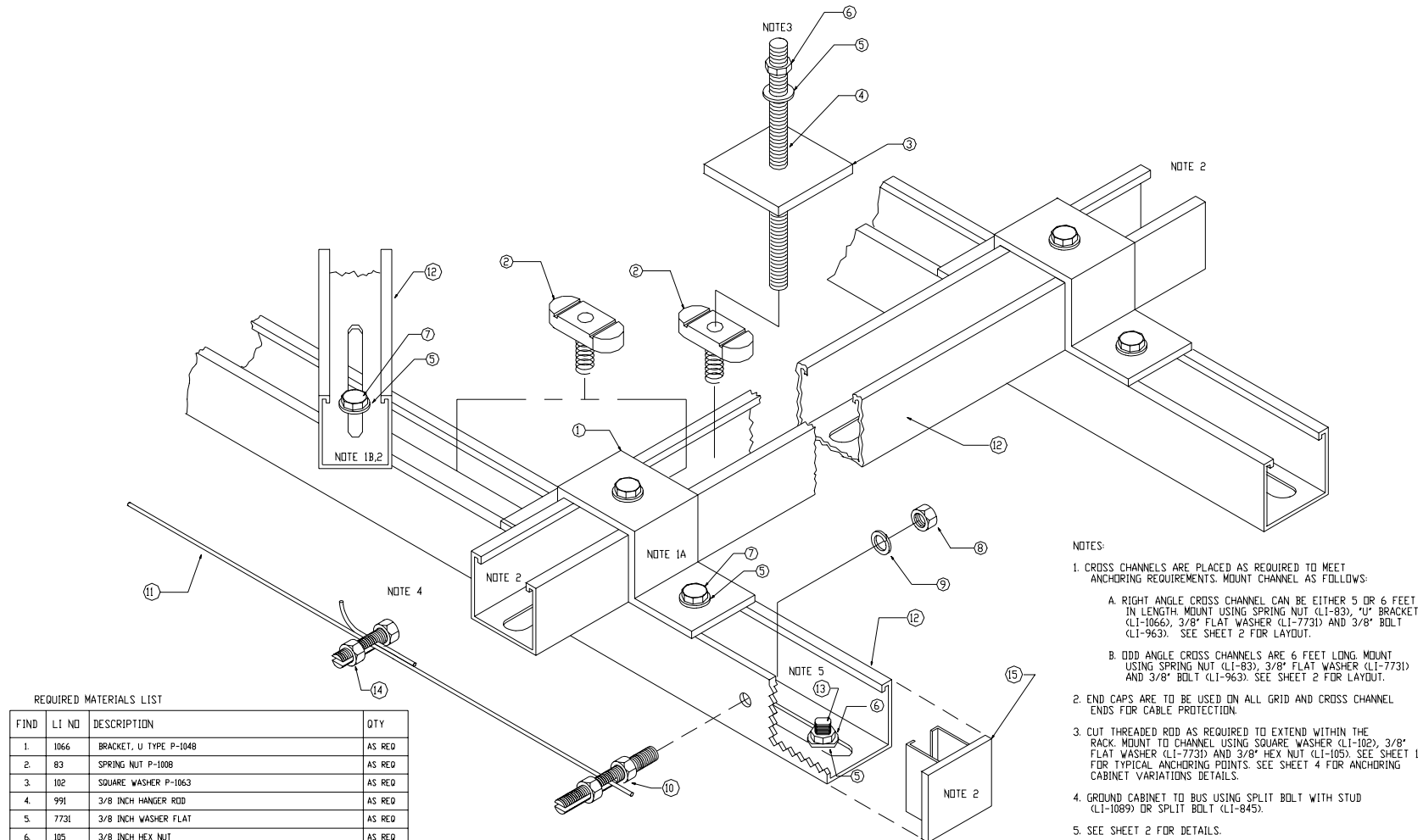
SIZE C DATE ESTABLISHED 1 SEP 81 DRAWING NUMBER 99-06-325

SCALE Full DATE 6 JAN 97 SHEET 1 OF 5



CHANGED WIRE &amp; BOLT SIZE

1 NOV 91 CS

MOVED FROM CATEGORY 16  
QA 98-004 DELETE NOTE 66 JAN 97 TMH  
10 DEC 99 JD

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	1066	BRACKET, U TYPE P-1048	AS REQ
2.	83	SPRING NUT P-1008	AS REQ
3.	102	SQUARE WASHER P-1063	AS REQ
4.	991	3/8 INCH HANGER ROD	AS REQ
5.	7731	3/8 INCH WASHER FLAT	AS REQ
6.	105	3/8 INCH HEX NUT	AS REQ
7.	963	3/8 INCH X 1 1/2 INCH BOLT	AS REQ
8.	7404	5/16 INCH NUT	AS REQ
9.	7407	5/16 INCH LOCK WASHER	AS REQ
10.	1089	SPLIT BOLT CONNECTOR WITH STUD	AS REQ
11.	6300	#4 BARE COPPER WIRE	AS REQ
12.	1071	SLOTTED STEEL CHANNEL	AS REQ
13.	1074	HILTI STUD	AS REQ
14.	845	SPLIT BOLT CONNECTOR	AS REQ
15.	1106	END CAP P-1280	AS REQ
16.	7072	CABLE CLAMP	AS REQ
17.	484	1/2 INCH CONDUIT	AS REQ
18.	6818	ANCHOR KIT	AS REQ

## NOTES:

1. CROSS CHANNELS ARE PLACED AS REQUIRED TO MEET ANCHORING REQUIREMENTS. MOUNT CHANNEL AS FOLLOWS:

A. RIGHT ANGLE CROSS CHANNEL CAN BE EITHER 5 OR 6 FEET IN LENGTH. MOUNT USING SPRING NUT (LI-83), "U" BRACKET (LI-1066), 3/8" FLAT WASHER (LI-7731) AND 3/8" BOLT (LI-963). SEE SHEET 2 FOR LAYOUT.

B. ODD ANGLE CROSS CHANNELS ARE 6 FEET LONG. MOUNT USING SPRING NUT (LI-83), 3/8" FLAT WASHER (LI-7731) AND 3/8" BOLT (LI-963). SEE SHEET 2 FOR LAYOUT.

2. END CAPS ARE TO BE USED ON ALL GRID AND CROSS CHANNEL ENDS FOR CABLE PROTECTION.

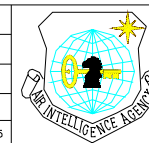
3. CUT THREADED ROD AS REQUIRED TO EXTEND WITHIN THE RACK. MOUNT TO CHANNEL USING SQUARE WASHER (LI-102), 3/8" FLAT WASHER (LI-7731) AND 3/8" HEX NUT (LI-105). SEE SHEET 1 FOR TYPICAL ANCHORING POINTS. SEE SHEET 4 FOR ANCHORING CABINET VARIATIONS DETAILS.

4. GROUND CABINET TO BUS USING SPLIT BOLT WITH STUD (LI-1089) OR SPLIT BOLT (LI-845).

5. SEE SHEET 2 FOR DETAILS.

# U.S. AIR FORCE AIR INTELLIGENCE AGENCY

DRAFTSMAN  
Meshew  
CHECKER  
R. S. Galus  
ENGINEER  
F. W. Wood  
APPROVED  
D. Duff  
DRAWING CONTROL # 325



TITLE  
Raised Floor  
Cabinet Anchoring &  
Grounding Details -  
Hardware

SIZE  
C  
DATE ESTABLISHED  
1 SEP 89  
DRAWING NUMBER  
99-06-325

SCALE  
Full  
DATE  
10 DEC 99  
SHEET  
3 OF 5



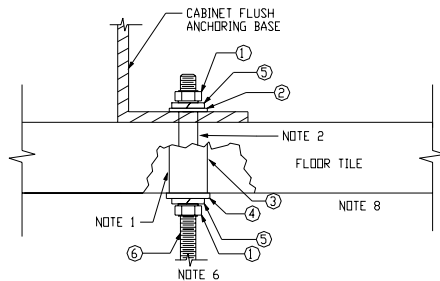


FIG. A-1  
USE FOR CY-597

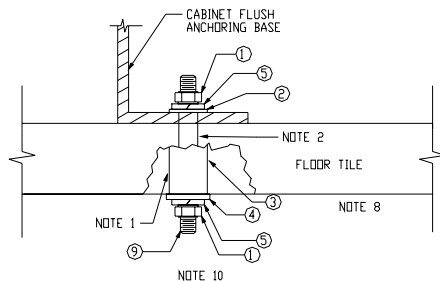


FIG. A-2  
USE FOR GROUNDLINE AND STATUETTE WORKSTATIONS

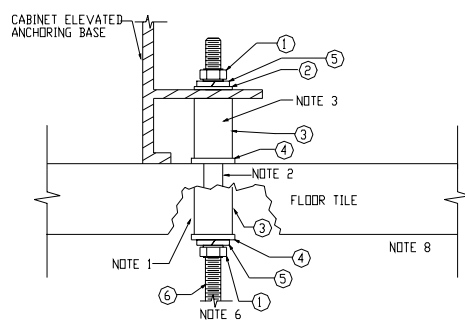


FIG. B  
USE FOR EMCOR 10 SERIES

NON-INSULATED RACK ANCHORING DETAILS (TYPICAL)

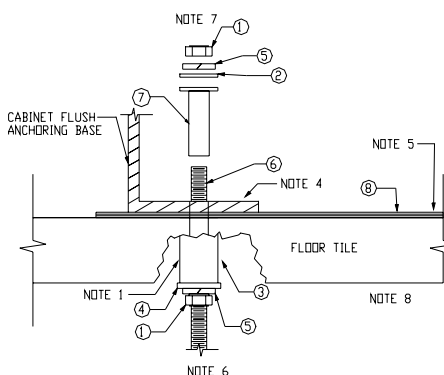


FIG. C

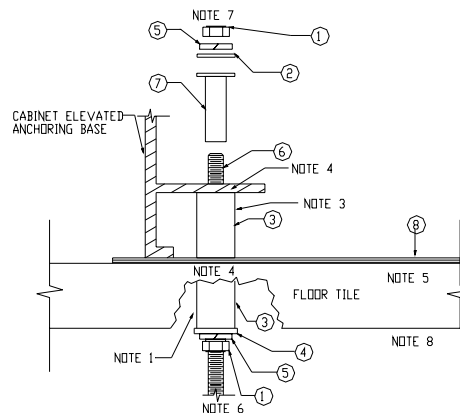


FIG. D

INSULATED RACK ANCHORING DETAILS (TYPICAL)

REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	105	3/8 IN HEX NUT	AS REQ
2.	86	3/8 IN X 7/8 IN OD FLAT WASHER	AS REQ
3.	484	1/2 IN EMT CONDUIT	AS REQ
4.	7731	3/8 IN X 1 IN OD FLAT WASHER	AS REQ
5.	998	3/8 IN LOCK WASHER	AS REQ
6.	991	3/8-16 THREADED ROD	AS REQ
7.	191	3/8 IN NYLON SHOULDER WASHER	AS REQ
8.	189	1/16 IN PHENOLIC SHEET	AS REQ
9.	7296	3/8-16 X 4 1/2 IN THREADED ROD	AS REQ

UPDATED NOTE 8  
ADDED NOTE 10  
ADDED SHEET 5, CHANGED SHEET 4 TITLE  
ADDED FIGURE A-2 AND FIND #9  
MOVED FROM CATEGORY 16

15 DEC 93 PMS  
18 APR 94 REM  
25 APR 94 TRR  
23 SEP 94 PMS  
6 JAN 97 TMH

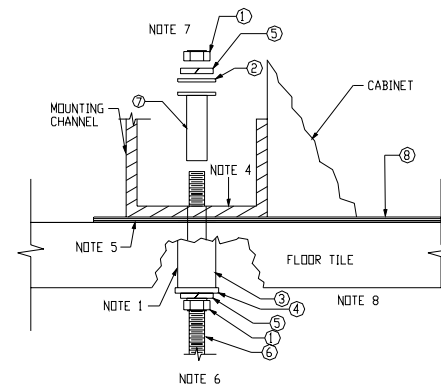


FIG. E

NOTES:

1. CUT CONDUIT SPACERS TO EXTEND APPROXIMATELY 1/8 INCH BELOW REINFORCING RIBS OF FLOOR TILE. CONDUIT SPACER IS NOT REQUIRED ON FLAT BOTTOMED FLOOR TILES. SHORTEN NYLON SPACER AS REQUIRED. (CUT CONDUIT SPACERS TO 2 INCH LENGTHS FOR FIG. B)
2. 7/16 INCH DIA. HOLE REQUIRED.
3. CUT CONDUIT SPACER TO LENGTH REQUIRED FOR SUPPORT SHIM. (1/2 INCH LENGTH FOR FIG. B)
4. 9/16 INCH DIA. HOLE REQUIRED.
5. CUT PHENOLIC INTO STRIPS EXTENDING APPROXIMATELY 1/8 INCH WIDER THAN ALL BOTTOM SURFACES OF CABINETS, BOTH INSIDE AND OUTSIDE EDGES.
6. SEE SHEET 3 FOR ATTACHING HANGER ROD TO ANCHORING GRID. SEE SHT. 1 FOR NUMBER OF ANCHORING POINTS REQUIRED.
7. BE CAREFUL NOT TO CRUSH NYLON OR PHENOLIC WHEN TIGHTENING NUTS AND THAT ALIGNMENT OF ALL PARTS MAINTAINS CABINET INSULATION.
8. WHEN SECURING TO SUB-FLOOR (HARD FLOOR) USE THREADED STUD (LI 1074) IN PLACE OF THREADED ROD STOCK (LI 991) AND OTHER MATERIALS SHOWN FOR UNDER RAISED FLOOR.
9. SHORTEN NYLON SPACER AS REQUIRED.
10. SEE 99-13-288 SHT 3 FOR NUMBER OF ANCHORING POINTS REQUIRED.

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
Meshew  
CHECKER  
R. S. Galus  
ENGINEER  
F. W. Wood  
APPROVED  
D. Duff  
DRAWING CONTROL # 325



TITLE  
Raised Floor  
Cabinet Anchoring Details  
Cabinet Variations  
SIZE  
C  
DATE ESTABLISHED  
15 MAY 87  
DRAWING NUMBER  
99-06-325  
SCALE  
Full  
DATE  
6 JAN 97  
SHEET  
4 OF 5

MOVED FROM CATEGORY 16  
ES 99-005 CHANGE L/1 59 FROM 2 1/2" TO 2"

6 JAN 97 TMH  
10 DEC 99 JD

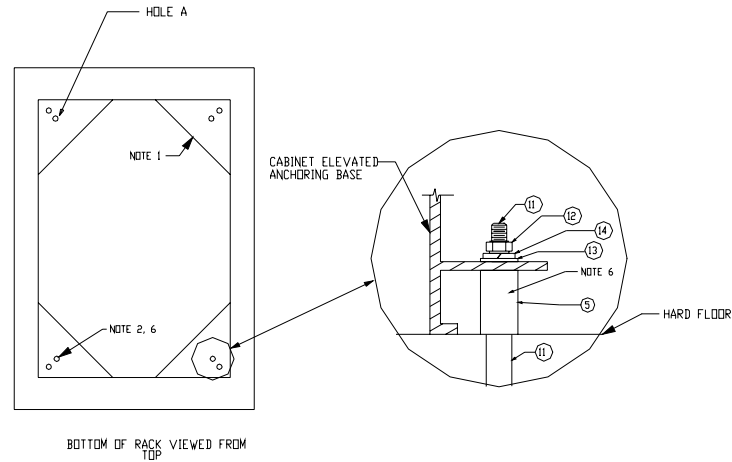
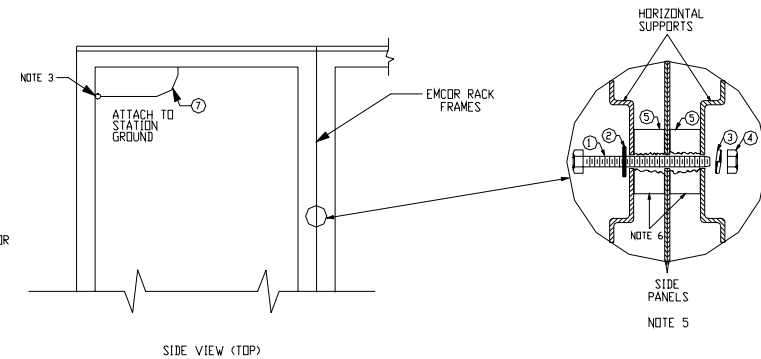
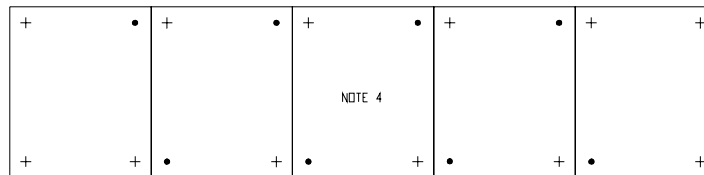


FIG 1



SIDE VIEW (TOP)

FIG 2



POSITION OF BOLTS IN BASE OF EQUIPMENT LINEUP

FIG 3

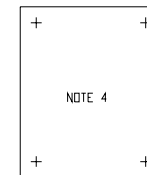
STAND ALONE RACK  
BOLT POSITION


FIG 4

## NOTES:

- SEE 99-06-325 SHT 4 FOR RAISED FLOOR CABINET ANCHORING AND GROUNDING DETAILS.
- USE RACK FOR TEMPLATE. MARK HOLE 'A' FOR PLACEMENT ON FLOOR. MOVE RACK, PLACE ANCHOR BOLT, THEN USING FIND NUMBER'S 12, 13, 14, AND 15 TO INSTALL RACK. THREADED ROD OR BOLT MAY BE USED. USE SPACER BETWEEN RACK PLATE AND FLOOR. IF RACK PLATE IS FLUSH, HILTI STUDDLE 1073) AND LIT'S 79, 104, AND 106 MAY BE USED TO ANCHOR THE RACK TO THE FLOOR.
- ATTACH #10 AWG GREEN WIRE (LI 7119) TO STATION GROUND USING SPLIT BOLT CONNECTOR (LI 845). ATTACH TO FIRST AVAILABLE HOLE ON REAR OF RACK VERTICAL UPRIGHT USING TERMINAL LUG (LI 385) 10-32 X 1/2 MACHINE SCREW (LI 27), AND A CLIP NUT (LI 63). GROUND TO COPPER GROUND STRIP IF AVAILABLE.
- + INDICATES STUD OR BOLT  
\* INDICATES UNUSED HOLE  
SEE T.O. 31-10-29
- USING HOLES CLOSEST TO CABINET FRAME ON THE TOP AND BOTTOM HORIZONTAL SUPPORTS AS A TEMPLATE, DRILL FOUR HOLES THRU SIDE PANELS 1/4" DIA. FOR ATTACHING RACKS TOGETHER. IF SIDE PANELS ARE NOT USED, THEN SUPPLIED BRACKET, EMC/DR P/N XJCX-F10-000000, IS TO BE USED TO ATTACH RACKS TOGETHER.
- CUT CONDUIT TO LENGTH OF 1/2" (+/- 1/32") FOR USE AS SPACER.

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	59	1/4" - 20 X 2" BOLT, PER TWO RACKS	4EA
2.	79	1/4" FLAT WASHER, PER TWO RACKS	4EA
3.	104	1/4" LOCK WASHER, PER TWO RACKS	4EA
4.	106	1/4" - 20 NUT, PER TWO RACKS	4EA
5.	484	1/2" CONDUIT	AS REQ
6.	385	TERMINAL LUG, NOT SHOWN	1EA
7.	7119	#10 AWG GREEN WIRE	AS REQ
8.	845	SPLIT BOLT CONNECTOR, NOT SHOWN	1EA
9.	27	10 - 32 X 1/2 SCREW, NOT SHOWN	1EA
10.	63	CLIP NUT, NOT SHOWN	1EA
11.	7311	ANCHOR, BOLT	AS REQ
12.	105	3/8" HEX NUT	AS REQ
13.	86	3/8" FLAT WASHER	AS REQ
14.	998	3/8" LOCK WASHER	AS REQ
15.	963	3/8" X 1 1/2" BOLT, NOT SHOWN	AS REQ

<b>U.S. AIR FORCE</b> <b>AIR INTELLIGENCE AGENCY</b>		<b>TITLE</b> Hard Floor Cabinet Anchoring	
<b>DRAFTSMAN</b> T. R. Rademacher <b>CHECKER</b> C. Smith <b>ENGINEER</b> T. R. Rademacher <b>APPROVED</b> D. Duff <b>DRAWING CONTROL</b> * 325		<b>SIZE</b> C	<b>DATE ESTABLISHED</b> 25 APR 94 <b>DRAWING NUMBER</b> 99-06-325
<b>SCALE</b> Full		<b>DATE</b> 10 DEC 99	<b>SHEET</b> 5 OF 5

F331-1

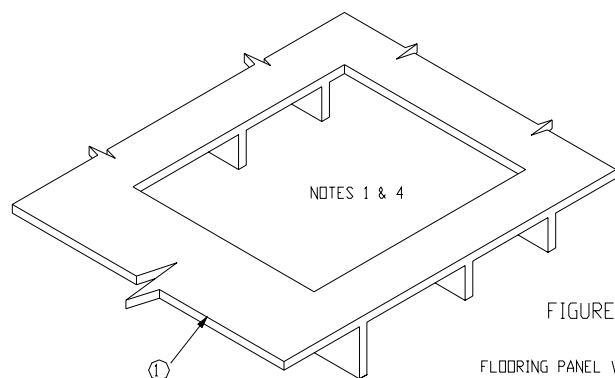


FIGURE A

FLOORING PANEL WITH CUTOUT

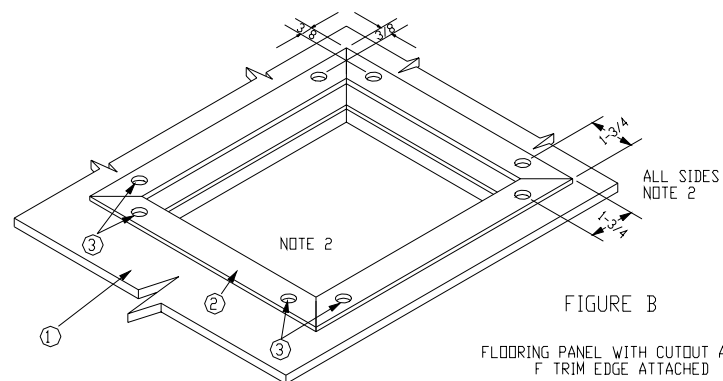


FIGURE B

FLOORING PANEL WITH CUTOUT AND F TRIM EDGE ATTACHED

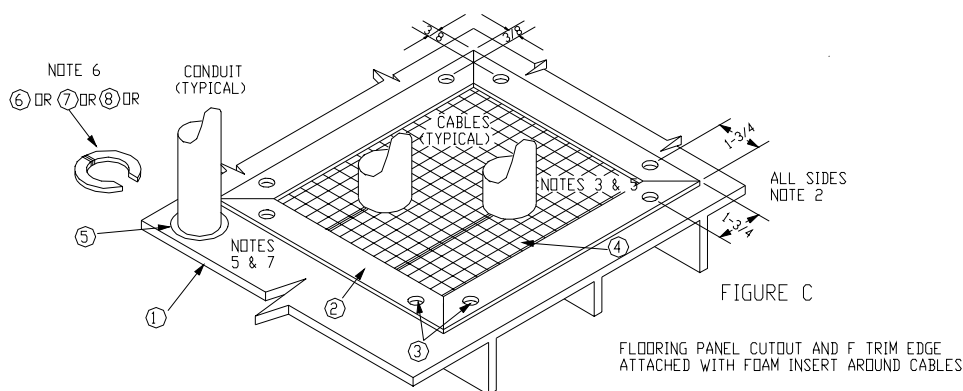


FIGURE C

FLOORING PANEL CUTOUT AND F TRIM EDGE ATTACHED WITH FOAM INSERT AROUND CABLES

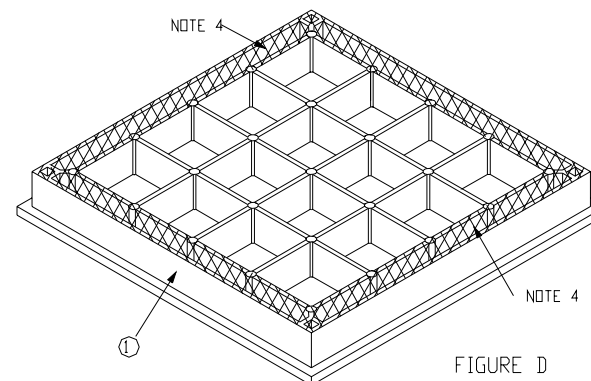


FIGURE D

BOTTOM VIEW OF RAISED FLOORING PANEL

## NOTES:

ALL DIMENSIONS ARE IN INCHES (+/- 1/32).

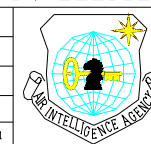
1. MAKE 3-1/2, 5-1/2, 7-1/2, OR 9-1/2 INCH SQUARE CUTOUT IN FLOOR PANEL AS REQUIRED.
2. ATTACH F TRIM EDGE TO FLOOR PANEL WITH TWO BLIND RIVETS (LI 00036) PER SIDE. CHECK FOR UNDERFLOOR OBSTRUCTIONS BEFORE DRILLING HOLES AND MOVE AS REQUIRED. CORNERS OF TRIM MUST BE MITERED AT 45° ANGLE.
3. CUT FOAM INSERT TO SIZE WITH HOLES FOR CABLE ENTRY AND PLACE IN OPENING. ENSURE THERE ARE NO AIR LEAKS AROUND CABLES.
4. DO NOT CUT HOLES IN SHADED AREA SHOWN IN FIG. D. HOLES IN THAT AREA WOULD WEAKEN THE PANEL. HOLES DETAILED ON SHEET 2 ARE A NECESSARY EXCEPTION.
5. LI 06913 OR LI 1257 MAY BE USED AS AN AIR SEAL AROUND CABLES AND CONDUIT. LI 06913 MUST BE USED TO SEAL PENETRATIONS THROUGH A FIREWALL OR BARRIER.
6. DO NOT USE THE FLOORPLATE AROUND THE CONDUIT INSIDE THE RACK. ONLY USE THE FLOORPLATE AROUND THE CONDUIT OUTSIDE THE RACK.
7. SEE DRAWING 99-06-331, SHEET 2 OF 2, FOR LOCATION OF HOLE WITHIN EMCOR RACK.
8. USE FIGS A AND B FOR GROUNDLINE POSITION INSTALLATION.

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.		24 X 24 FLOORING PANEL	AS REQ
2.	1256	F TRIM EDGE STRIP	AS REQ
3.	36	BLIND RIVET	8 EA
4.	1257	FOAM INSERT	AS REQ
5.	6913	FIRESTOP PUTTY	AS REQ
6.	41	FLANGE, FLOOR PLATE U/W 1/2" CONDUIT	AS REQ
7.	42	FLANGE, FLOOR PLATE U/W 3/4" CONDUIT	AS REQ
8.	43	FLANGE, FLOOR PLATE U/W 1" CONDUIT	AS REQ

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAWN  
Estala  
CHECKER  
H. L. Decker  
ENGINEER  
R. D. Suttles  
APPROVED  
D. Duff  
DRAWING CONTROL # 331

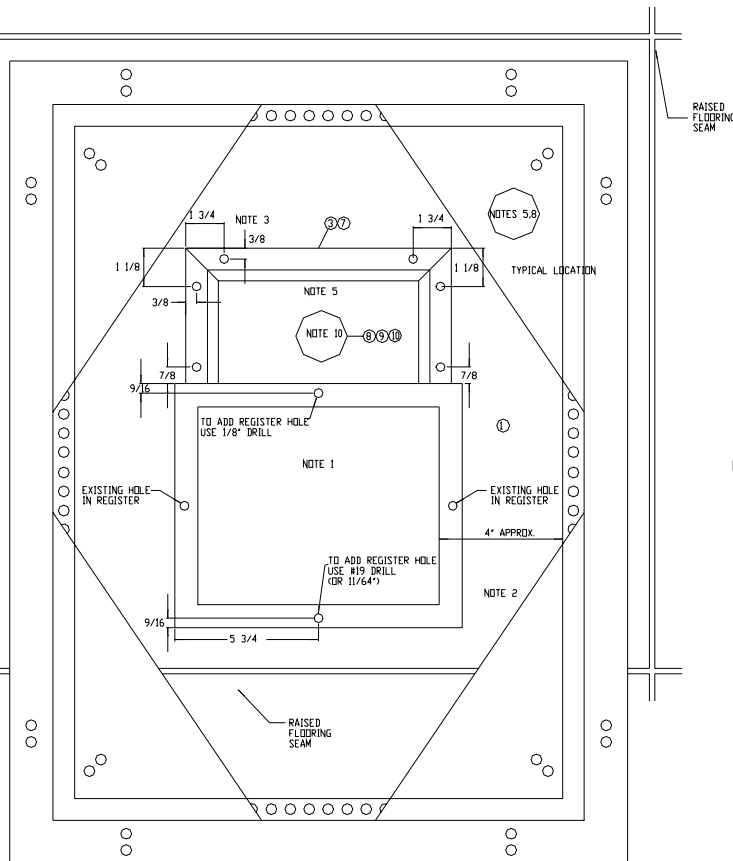


TITLE Raised Floor  
Cutout Details (for Racks  
Without Underfloor Cooling)

SIZE C DATE ESTABLISHED 12 MAY 82 DRAWING NUMBER 99-06-331

SCALE Full DATE 10 DEC 99 SHEET 1 OF 2

REAR OF EQUIPMENT RACK

FIGURE E  
BOTTOM VIEW OF EMCOR  
SERIES 10 RACK WITH CUTOUT

NOTE 7

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.		24 X 24 FLOORING PANEL	AS REQ
2.	50	AIR REGISTER	1 EA
3.	1256	F TRIM EDGE STRIP	AS REQ
4.	36	BLIND RIVET	7 EA
5.	7094	SCREW, TAPPING 8-32 1"	3 EA
6.	6913	FIRESTOP PUTTY	AS REQ
7.	1257	FOAM INSERT	AS REQ
8.	1315	3 INCH GROMMET	AS REQ
9.	1316	4 INCH GROMMET	AS REQ
10.	1317	4 3/4 INCH GROMMET	AS REQ

## NOTES:

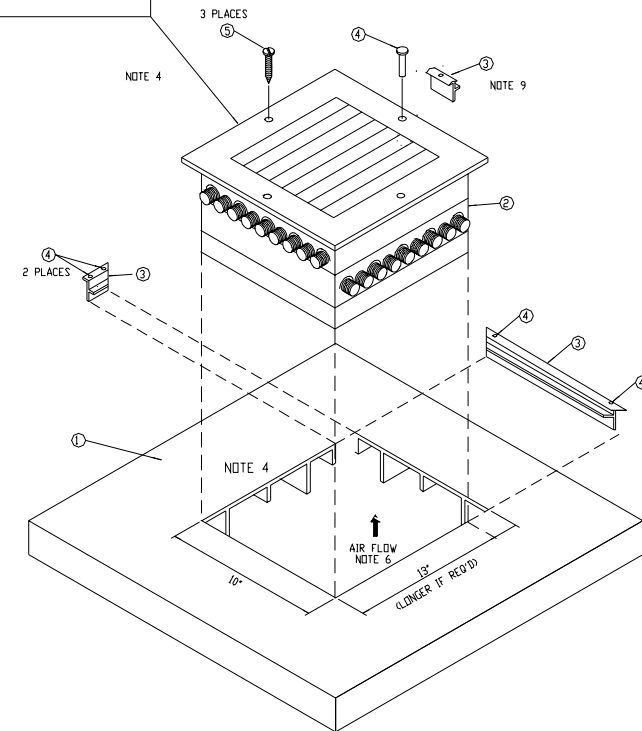
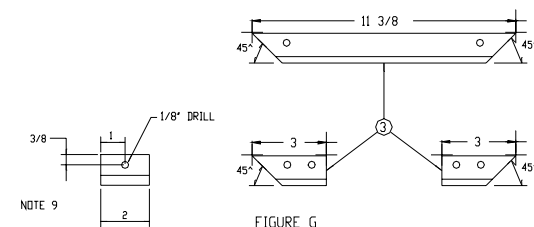
ALL DIMENSIONS ARE IN INCHES (+/- 1/32).  
ANGLE TOLERANCE IS (+/- .5 DEGREE).

1. AN ADDITIONAL PEDESTAL WILL BE REQUIRED AT EACH POINT WHERE THE FLOOR SEAM PASSES THROUGH THE CUTOUT AREA.
2. THE DIMENSIONS FOR LOCATION WITHIN RACK FOOTPRINT ARE APPROXIMATE, THEY MAY BE CHANGED TO AVOID (IF POSSIBLE) CUTTING TOO CLOSE TO FLOORING SEAMS.
3. CHECK FOR UNDERFLOOR OBSTRUCTIONS BEFORE DRILLING RIVET HOLES AND MOVE AS REQUIRED, RIVETS ARE CENTERED ON WIDTH AFTER ADDING 11/64" HOLE.
4. AFTER ADDING 11/64" HOLE IN REGISTER, USE REGISTER AS TEMPLATE TO DRILL 3 HOLES IN THE FLOOR USING 9/64" DRILL BIT.
5. SEE FIG. C, SHT 1 OF 2, THIS DRAWING FOR RUNNING CONDUIT AND CABLING. LI 6913 OR LI 1257 MAY BE USED AS AN AIR SEAL AROUND CABLES AND CONDUIT. SEAL CONDUIT FROM UNDER THE FLOOR BECAUSE OF THE GAP BETWEEN THE RACK AND RAISED FLOOR.
6. OPEN DEFLECTION BLADES AND ADJUST DAMPER FOR EXHAUSTED AIR TEMPERATURE (TOP OF RACK) OF APPROXIMATELY 75 DEGREES FAHRENHEIT. DEFLECTION BLADES SHOULD BE SET TO DISTRIBUTE AIR EVENLY AROUND SIDES AND REAR OF EQUIPMENT. ENSURE THAT ALL EQUIPMENT IS ON AND OPERATING AT LEAST ONE HALF HOUR FOR MAXIMUM RACK TEMPERATURE.
7. DIMENSIONS SHOWN ARE FOR THE EMCOR SERIES 10 RACK. IF ANOTHER TYPE OF RACK IS USED, THE ACTUAL CUTOUT DIMENSIONS WILL REMAIN THE SAME, WHILE THE PLACEMENT DIMENSIONS MAY CHANGE. BASICALLY THE CUTOUT SHOULD BE CENTRALLY LOCATED, TOWARD THE REAR OF THE RACK.
8. TO BRING POWER INTO A RACK, SECURE THE RACK FRAME TO RAISED FLOOR, CUT A HOLE THROUGH THE RACK FRAME AND FLOOR TILE AT THE SAME TIME USING A HOLE SAW. FOR 1/2 INCH CONDUIT CUT HOLE TO 1 INCH. FOR 3/4 INCH CONDUIT CUT HOLE TO 1-1/4 INCHES.
9. CUT 2 INCH LENGTH OF TRIM STRIP AND DRILL AS SHOWN IN FIGURE G. ATTACH UNDER AIR REGISTER FLANGE FOR SUPPORT OF INSERT MATERIAL.
10. OPTION --DO NOT CUT CABLE PORT FOR SMALL BUNDLES OF CABLE. DRILL A 3", 4", OR 4 3/4" HOLE TO INSERT GROMMET L/I 1315, 1316, OR 1317.

CAUTION: REGISTER IS NOT OF LOAD-BEARING CONSTRUCTION AND IS INTENDED FOR INTERIOR RACK INSTALLATION ONLY.

MOVED FROM CATEGORY 17  
S98-004: ADDED GROMMETS FOR CABLE PORT  
671W/SE - CLARIFIED FIRESTOP PUTTY USAGE IN NOTE 5. 18 FEB 00 JD

6 JAN 97 TMH  
06 OCT 98 JD

FIGURE F  
FLOORING PANELFIGURE G  
TOP VIEW OF F TRIM  
EDGE WITH DIMENSIONSU.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

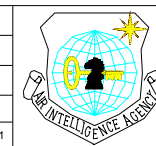
DESIGNER  
Estola

CHECKER  
R. S. Golus

ENGINEER  
W. Meyers

APPROVED  
J. Davis

DRAWING CONTROL # 331



TITLE  
Raised Floor  
Cutout and Cooling Details  
Emcor 10 Series Rack  
or General Use

SIZE  
C

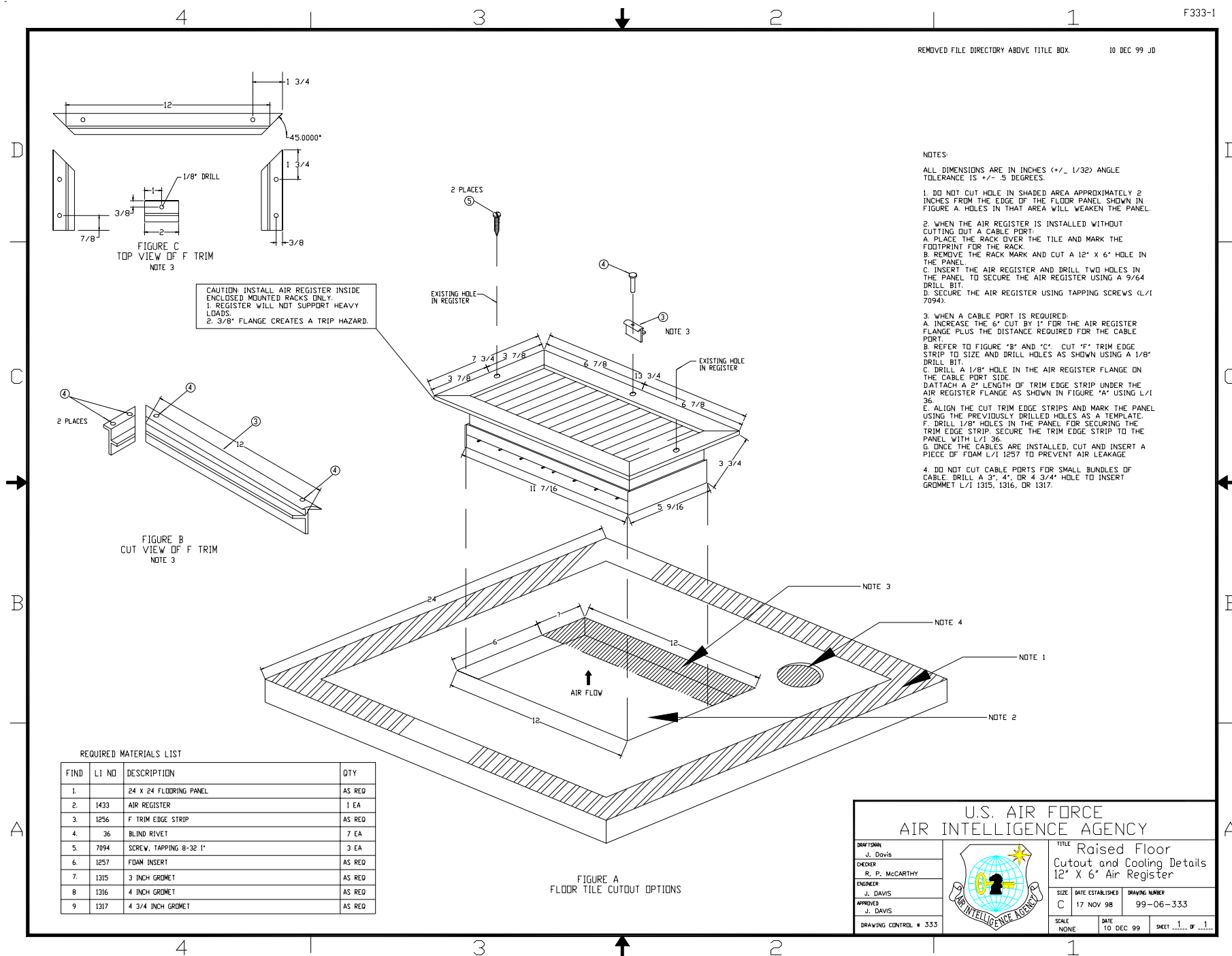
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31 Oct 86

DRAWING NUMBER  
99-06-331

SCALE  
Full

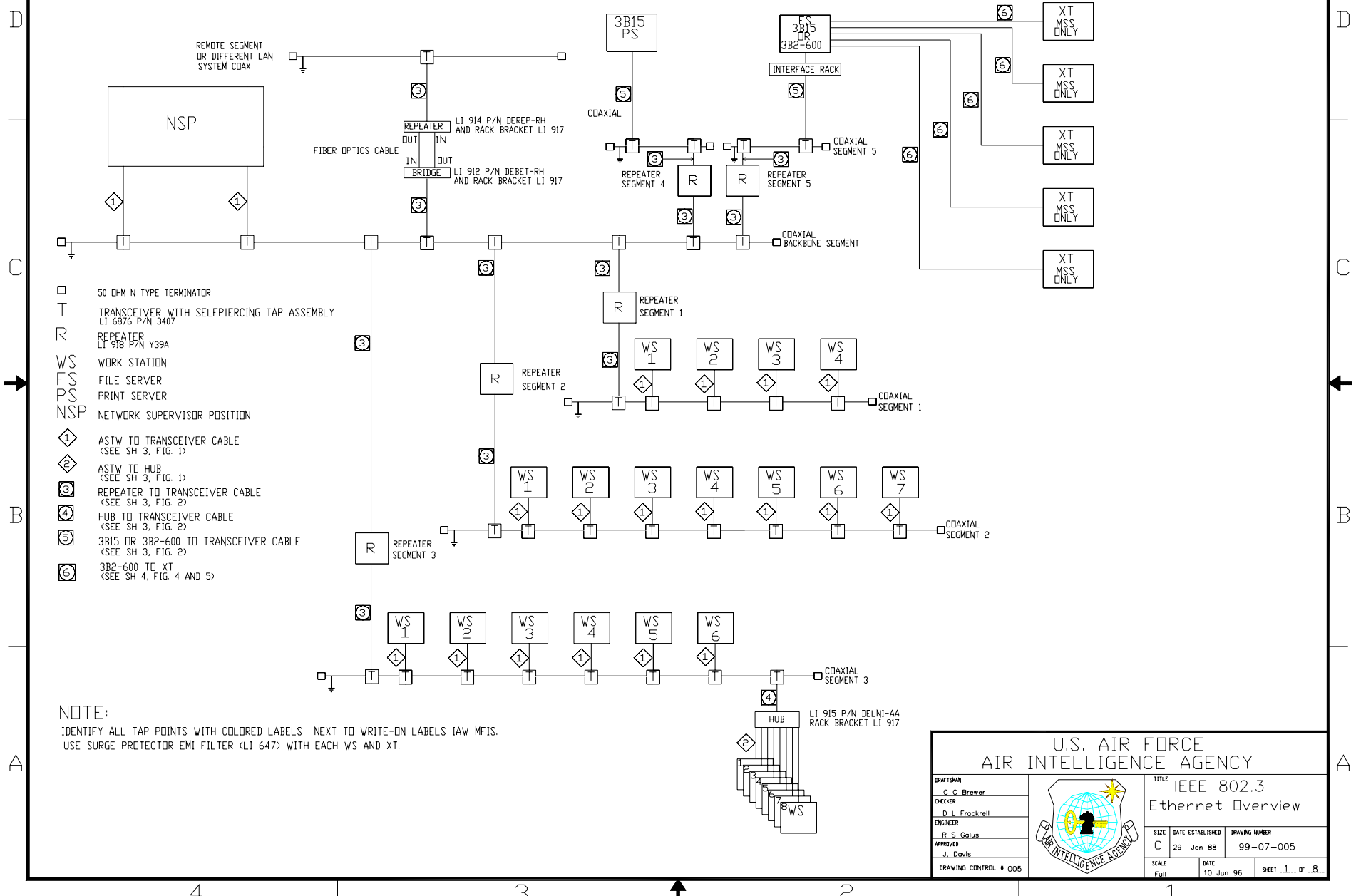
DATE  
10 DEC 99

SHEET  
2 OF 2



G005-1

CHANGED DATE: 15 MAR 91 DJM  
 CHANGED REPEATER, BRIDGE, AND HUB CABLES: 15 MAY 91 TCM  
 RACK AND INSTRUCTION CHANGES: 15 NOV 91 TEM  
 DELETED SHEET 7, GENERAL DUCTING AND  
 HARDWARE INSTALLATION INSTRUCTIONS.  
 RENUMBERED DRAWINGS. 1 FEB 95 PMS



## COAXIAL SEGMENT CABLE

1. THE MAXIMUM LENGTH OF EACH COAXIAL SEGMENT IS 500 M (1,640 FT) MADE FROM ONE HOMOGENEOUS LENGTH OF CABLE. THERE IS NO MINIMUM LENGTH FOR A SEGMENT. IF A LARGE SEGMENT CANNOT BE MADE FROM ONE CONTINUOUS LENGTH OF CABLE, THEN THE PIECES WILL BE 234 M (767.7 FT), 70.2 M (230.30 FT), OR 177 M (580.7 FT) +/- .5 M (1.64 FT). IF A SPLICE IS REQUIRED, THE 8.2 FT DISTANCE BETWEEN TAP POINTS MUST BE MAINTAINED TO KEEP LINE LOSS TO A MINIMUM. THESE LENGTHS MATCH 1/4 WAVE LENGTH OF THE DATA RATE AND IS REQUIRED TO MINIMIZE LOSS. ANY COMBINATION OF THESE PIECES CAN BE USED TO MAKE A COAXIAL SEGMENT NOT TO EXCEED 500 M.
2. BOTH ENDS OF THE SEGMENT WILL BE TERMINATED WITH A 50 OHM N TYPE TERMINATOR AT A TAP POINT. THE CONNECTOR AND TERMINATOR WILL BE INSULATED FROM GROUND AND ONE END ONLY WILL BE CONNECTED TO THE GROUND GRID.
3. THE MINIMUM BEND RADIUS OF THE CABLE IS 10 TIMES THE CABLE DIAMETER. FOR BELDEN CABLE P/N 89960 WHICH HAS AN O.D. OF .375 INCHES, THE MINIMUM BEND RADIUS IS 3.75 INCHES.
4. THE MAXIMUM NUMBER OF SEGMENTS BETWEEN TWO DEVICES IS 5 (REPEATER SEGMENTS COUNT AS A SEGMENT). FOR EXAMPLE: FOR WSI ON COAXIAL SEGMENT 1 TO TALK TO WSS ON COAXIAL SEGMENT 3, COMMUNICATIONS IS THRU THE MAXIMUM NUMBER OF SEGMENTS WHICH IS 5. SEGMENT 1 + REPEATER SEGMENT 1 + BACKBONE SEGMENT + REPEATER SEGMENT 3 + SEGMENT 3 = 5.
5. A MAXIMUM OF 100 TRANSCEIVERS CAN BE ATTACHED TO A COAXIAL SEGMENT (THIS INCLUDES THE TRANSCEIVERS USED FOR THE REPEATER). THE TRANSCEIVERS WILL BE ATTACHED AT THE MARKS ON THE COAXIAL SEGMENT WHICH ARE SPACED 2.5 M (8.2 FT) APART.

## REPEATER SEGMENT

1. A REPEATER SEGMENT IS USED TO CONNECT TWO OR MORE COAXIAL SEGMENTS TO MAKE A MAXIMUM TRUNK CABLE 2.5 KM IN LENGTH.
2. REPEATER SEGMENTS WILL COUNT TOWARDS THE TOTAL NUMBER OF SEGMENTS IN THE TRANSMISSION PATH.
3. THE REPEATER SEGMENT CABLE WILL BE MADE USING INDIVIDUALLY SHIELDED PAIR CABLE WITH OVERALL SHIELD AND WILL HAVE 15 PIN MINIATURE D TYPE CONNECTORS WITH LATCH AND POST.
4. THE REPEATERS WILL BE MOUNTED IN A RACK OR ENCLOSURE WHEN MOUNTED IN A EMCOR RACK, TWO REPEATERS CAN BE MOUNTED ON A SINGLE SHELF. IF A RACK IS NOT AVAILABLE IN THE AREA WHERE THE REPEATER IS TO BE MOUNTED, A RACK OR ENCLOSURE WILL HAVE TO BE INSTALLED. IT IS UP TO THE ENGINEER TO DETERMINE WHAT IS TO BE USED (RACK OR ENCLOSURE) AND WHERE IT IS TO BE PLACED.
5. THE Y39A REPEATERS HAVE TWO CONNECTORS ON THE BACK: J1 (LEFT PORT) TO BACKBONE J2 (RIGHT PORT) TO SEGMENT

## ATTACHMENT SEGMENT

1. THE ATTACHMENT CABLE WILL USE CABLE WITH INDIVIDUALLY SHIELDED PAIRS WITH OVERALL BRAIDED SHIELD WITH A MAXIMUM LENGTH OF 48 M.
2. THE CABLE CAN EXTEND NO MORE THAN 6 FEET ABOVE RAISED FLOOR OR 6 FEET FROM EXIT FROM DUCT, CONDUIT, OR WIRE MOLD. THE CABLE WILL BE INDIVIDUALLY SHIELDED PAIRS WITH AN OVERALL BRAIDED SHIELD.
3. THE ATTACHMENT CABLE WILL BE CONNECTED TO THE COAXIAL SEGMENT USING A TRANSCEIVER THAT WILL BE CONNECTED TO THE CLOSEST TAP POINT ON THE COAXIAL SEGMENT.
4. IF A PIECE OF EQUIPMENT IS REMOVED THEN THE ATTACHMENT CABLE WILL ALSO BE REMOVED. WHEN EQUIPMENT IS REMOVED FOR MAINTENANCE A DUMMY PLUG WILL BE INSTALLED OR CABLES WILL BE TERMINATED INTO AN ETHERNET DEVICE (SEE SH 4 FIG. 7).

## HUB (DELNI)

1. THE PURPOSE OF THE HUB IS TO SUPPLY UP TO EIGHT EQUIPMENT DROPS FROM A SINGLE TAP WHERE THERE IS A HIGH DENSITY OF TERMINALS IN A SMALL AREA AND IT IS IMPRACTICAL TO USE INDIVIDUAL XCVR FOR EACH TERMINAL. EXAMPLE: A ROOM 10 X 15 HAS 8 TERMINALS AND ONLY 2 TAP POINTS ON THE COAXIAL CABLE. A HUB WOULD BE REQUIRED IN THAT ROOM.
2. THE HUB IS NOT AN FCC TYPE B DEVICE. IT MUST BE MOUNTED IN AN RFI ENCLOSURE OR RACK. IF IT IS NOT POWERED BY TECH POWER, POWER LINE FILTERS WILL BE REQUIRED.
3. IT IS RECOMMENDED THAT ONLY 4 OF THE 8 PORTS ON EACH HUB BE USED. THIS WILL ALLOW FOR FUTURE EXPANSION.
4. IT IS RECOMMENDED THAT ONLY WORKSTATIONS THAT ARE HEAVILY USED BE CONNECTED TO A HUB BECAUSE OF ITS ARCHITECTURE. THE HUB WILL ACCESS THE LAN MUCH MORE OFTEN THAN A SINGLE WORKSTATION ON A XCVR.

## FIBER OPTICS LINK

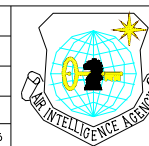
1. THE FIBER OPTIC LINK IS USED TO CONNECT REMOTE SEGMENTS OR AS A BRIDGE BETWEEN DIFFERENT LAN SYSTEMS. CONNECTIONS ARE MADE FROM RED INPUTS ON BRIDGE TO BLACK OUTPUTS ON REPEATER; AND BLACK OUTPUTS ON BRIDGE TO RED INPUTS ON REPEATER.
2. THE BRIDGE OR REPEATER UNITS WILL BE MOUNTED IN A RACK OR RFI ENCLOSURE. IF IT IS NOT POWERED THROUGH TECH POWER, POWER LINE FILTERS WILL BE REQUIRED.

## 3B2-600 TO XT

1. THE IBM/XT IS A DOS MACHINE AND CANNOT BE CONNECTED TO THE LAN SYSTEM BECAUSE THE LAN SOFTWARE RUNS UNDER ZENIX OPERATING SYSTEM.
2. THE XT CAN ONLY BE CONNECTED TO THE 3B2-600 COMPUTER USING MIL-188 CONNECTION.
3. WHEN THE XT IS DISCONNECTED FROM THE CABLE, THE CABLE WILL BE DISCONNECTED AT BOTH ENDS OR A DUMMY PLUG MUST BE INSTALLED ON THE UNTERMINATED END OF THE CABLE OR CONNECTOR BOX (SEE SH 4 FIG. 6).
4. THE 3B2-600/G IS MOUNTED IN A TEMPESTED CABINET. ANCHOR TO FLOOR IAW 99-13-032.

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AIR INTELLIGENCE AGENCY

DRAFTSMAN  
C C Brewer  
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T E Moorman  
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APPROVED  
J. Davis  
DRAWING CONTROL # 005



TITLE IEEE 802.3  
Ethernet Terms  
SIZE C DATE ESTABLISHED 29 Jan 88 DRAWING NUMBER 99-07-005  
SCALE Full DATE 30 Dec 96 SHEET 2 OF 8

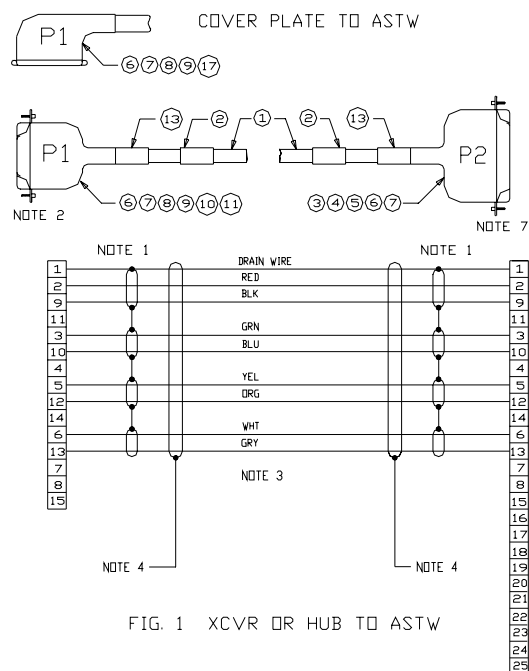


FIG. 1 XCVR OR HUB TO ASTW

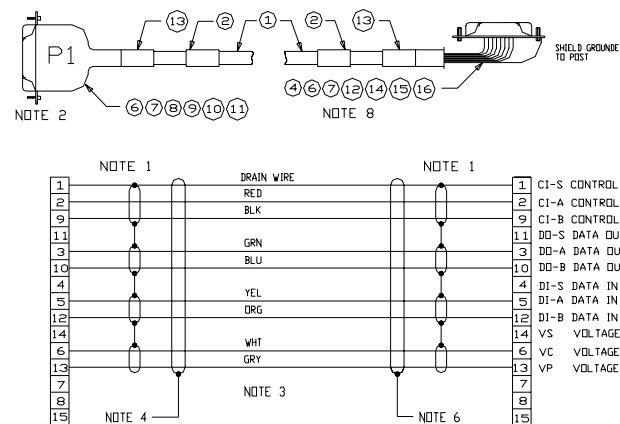


FIG. 3 HUB OR XCVR TO COVER PLATE

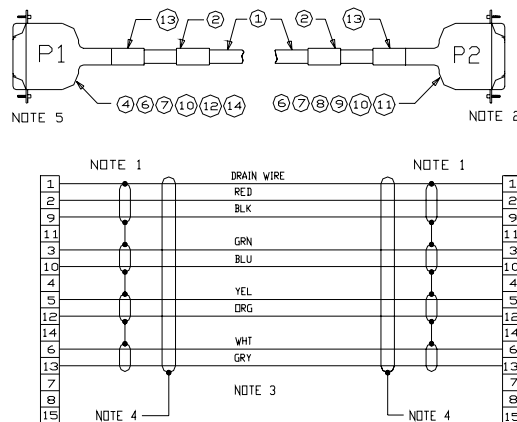


FIG. 2 3B15, 3B2-600, DEC 200 REPEATER, DEC 200 Y39A REPEATER, HUB, FIBER OPTIC BRIDGE, FIBER OPTIC REPEATER, PARSEC II WORKSTATION, OR HIGH POWER WORKSTATION (HPW) TO TRANSCEIVER.

PREFABRICATION  
REQUIRED MATERIALS LIST

FIND	L/I	DESCRIPTION	FIG 1	FIG 2	FIG 3
1	6864	CABLE 4 PR. P/N 89892	A/R	A/R	A/R
2	2238	LABEL	A/R	A/R	A/R
3	6880	PLUG DB25P M24308/4-261	1	N/R	N/R
4	6874	CONTACT M39029/64-369 PIN	9	9	9
5	6865	BACKSHELL RFI 1-745173-3 DB25	1	N/R	N/R
6	6866	FERRULE INNER 1-745129-9	2	2	1
7	6867	FERRULE OUTER 1-745130-1	2	2	1
8	6868	RECPT DB15S M24308/2-282	1	1	1
9	6875	CONTACT M39029/63-368 SKT	9	9	9
10	6869	BACKSHELL RFI 1-745172-3 DB15	1	2	1
11	6871	LATCH SLIDE 745583-1 DB15	1	2	1
12	6870	PLUG DB15P M24308/4-260	N/R	1	1
13	418	HEAT SHRINK	A/R	A/R	A/R
14	980	LOCKING POST NOTE 5	N/R	1 SET	1 SET
15	1324	TERMINAL LUG	N/R	N/R	1
16	7647	WIRE, 22 AWG, BLK	N/R	N/R	6 IN
17	1287	BACKSHELL RFI 745652-1 90 D. DB15	1	N/R	N/R

## NOTES:

- FERRULES WILL BE USED. ASSEMBLE CONNECTOR IAW SH 5 FIG 9 (CAPTIVE SCREW) OR SH 5 FIG 10 (LATCH SLIDE), AS APPLICABLE.
- DISCARD CAPTIVE SCREW AND INSTALL LATCH SLIDE IAW SH 5, FIG. 10.
- CONNECT DRAIN WIRE TO PIN 1.
- GROUND SHIELD TO BACK SHELL IAW SH 5, FIG. 9.
- THE LOCKING POST (LI 980) IS REQUIRED FOR CONNECTION TO THE 3B15, 3B2-600, HUB, DEC 200 REPEATER, FIBER OPTIC BRIDGE, FIBER OPTIC REPEATER, PARSEC II WORKSTATION, AND HIGH POWER WORKSTATION. THE Y39A REPEATER REQUIRES THE SUPPLIED CAPTIVE SCREW. IF REPEATER TYPE IS UNKNOWN, ALSO SUPPLY LOCKING POSTS (LI 980).
- GROUND SHIELD TO LOCKING POST USING A TERMINAL LUG (LI 1324) AND APPROPRIATE LENGTH OF WIRE (LI 7642).
- RETAIN CAPTIVE SCREW AND INCLUDE IN FAB. AT INSTALLATION SITE. INSTALL LATCH SLIDE (LI 947) IAW SH 5, FIG 10, IF REQUIRED.
- FERRULES ARE USED TO SECURE GROUNDING WIRE (LI 7647) TO SHIELD.

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APPROVED  
J. Davis  
DRAWING CONTROL # 005



TITLE  
Attachment Cable  
Wire Connections

SIZE  
C

DATE ESTABLISHED  
29 Jun 96

DRAWING NUMBER  
99-07-005

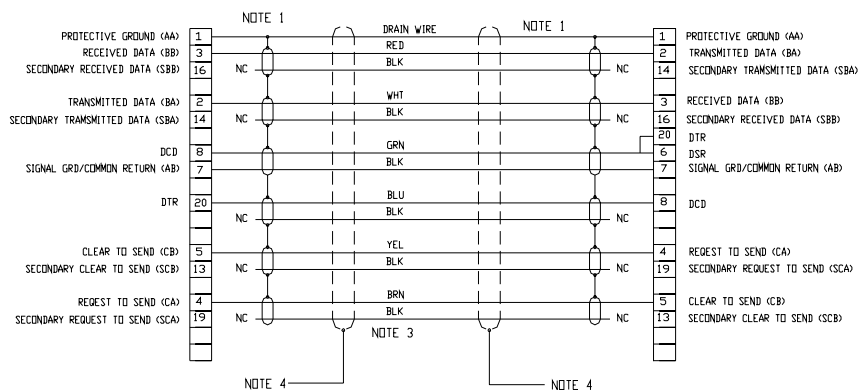
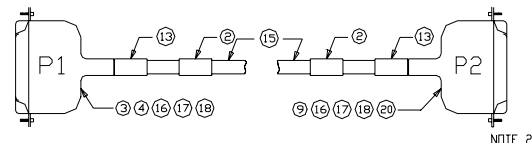
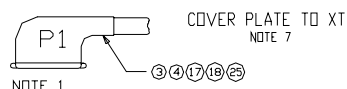
SCALE  
Full

DATE  
10 Jun 96

SHEET 3 OF 8



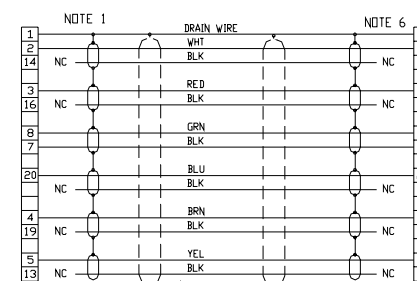
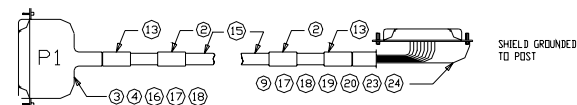
G005-4

FIG. 4 3B2-600 TO XT  
NOTE 7

# PREFABRICATION REQUIRED MATERIALS LIST

FIND	L/I	DESCRIPTION	FIG 4	FIG 5	FIG 6	FIG 7
2	2238	LABEL	A/R	A/R	N/R	N/R
3	6880	PLUG DB25P M24308/4-261	1	1	1	N/R
4	6874	CONTACT M39029/64-369 PIN	13	13	N/R	N/R
8	6868	RECP T DB15S M240308/2-282	N/R	N/R	N/R	1
9	6875	CONTACT SKT M39029/63-368	13	13	N/R	N/R
10	6869	BACKSHELL RFI 1-745172-3 DB15	N/R	N/R	N/R	1
13	418	HEAT SHRINK	A/R	A/R	N/R	N/R
15	860	CABLE 6PR. P/N 8166	A/R	A/R	N/R	N/R
16	57	BACKSHELL RFI 745173-1 DB25	2	1	1	N/R
17	857	FERRULE INNER 2-745129-2	2	2	N/R	N/R
18	858	FERRULE OUTER 1-745130-2	2	2	N/R	N/R
19	6881	LOCKING POST	N/R	2	N/R	N/R
20	833	RECP T DB25S 205207-1	1	1	N/R	N/R
21	8307	BUTTON PLUG 1/2 INCH	N/R	N/R	1	N/R
22	8310	BUTTON PLUG 3/8 INCH	N/R	N/R	N/R	1
23	1324	TERMINAL LUG	N/R	1	N/R	N/R
24	7647	WIRE, 22 AWG, BLK	N/R	6 IN	N/R	N/R
25	1288	90 DEG BACKSHELL RFI 745653-1 DB25	1	N/R	1	N/R
26	1287	90 DEG BACKSHELL RFI 745652-1 DB15	N/R	N/R	N/R	1
27	947	SLIDE, LATCH CLIP ASSEMBLY	1	N/R	N/R	N/R

NOTE 8

FIG. 5 3B2-600 TO COVER PLATE  
(XT CONNECTION)

## NOTES:

- FERRULES WILL BE USED. ASSEMBLE CONNECTOR IAW SH 5 FIG 9 (CAPTIVE SCREW) OR SH 5 FIG 10 (LATCH SLIDE), AS APPLICABLE.
- RETAIN CAPTIVE SCREW AND INCLUDE IN FAB. AT INSTALLATION SITE INSTALL LATCH SLIDE (LI 947) IAW SH 5, FIG. 10, IF REQUIRED.
- CONNECT DRAIN WIRE TO PIN 1.
- GROUND SHIELD AND UNUSED WIRES TO BACK SHELL IAW SH 5, FIG. 9.
- GROUND SHIELD TO LOCKING POST USING A TERMINAL LUG (LI 1324) AND APPROPRIATE LENGTH OF WIRE (LI 7642).
- FERRULES ARE USED TO SECURE GROUNDING WIRE (LI 7647) TO SHIELD. FOR MINATURE D PANEL MOUNTED CONNECTORS, SCREW POSTS (LI 859) MAY BE USED.
- WHEN CONNECTING FROM A MULTIPLEXER TO XT, IF SWITCHING OF SIGNALS IS ACCOMPLISHED IN MULTIPLEXER WIRING, CHANGE TO DIRECT PINNING AS REQUIRED.
- IF A SUBSTITUTED CABLE HAS TOO SMALL A DIAMETER FOR THESE ITEMS, USE LI 6865 BACKSHELL, LI 6866 INNER FERRULE, AND LI 6867 OUTER FERRULE.



FIG. 6 DUMMY PLUG FOR XT PORT

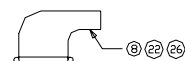


FIG. 7 DUMMY PLUG FOR LAN PORT

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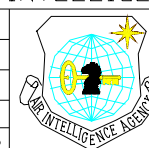
DRAFTSMAN  
C C Brewer

CHECKER  
T E Moorman

ENGINEER  
R S Galus

APPROVED  
J. Davis

DRAWING CONTROL # 005



TITLE  
Attachment Cable  
Wire Connections

SIZE  
C

DATE ESTABLISHED  
29 Jan 88

DRAWING NUMBER  
99-07-005

SCALE  
Full

DATE  
30 Dec 96

SHEET  
4 OF 8

G005-5

REDREW FERRULE AND BRAID  
ON FIG 9 AND 10  
UPDATED NOTES.  
MOVED FIGURE 8 TO 99-07-395

17DEC92 TRR  
10JUN96 PMS  
30 DEC 97 TMH

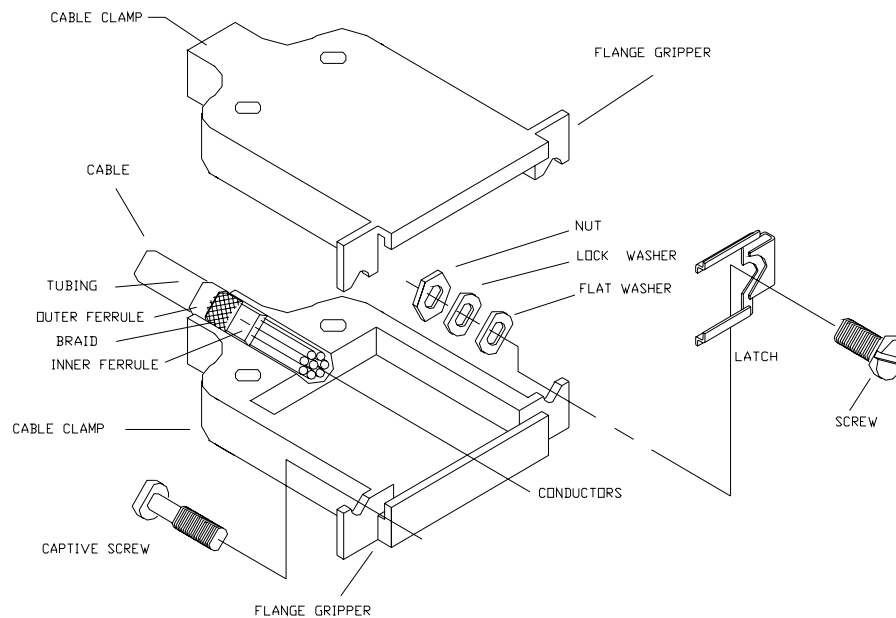


FIGURE 8  
(CAPTIVE SCREW, BOTH SIDES)

FIGURE 9  
(LATCH, BOTH SIDES)

#### ASSEMBLY NOTES:

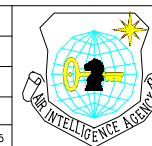
1. SLIDE OUTER FERRULE OVER CABLE JACKET.
2. STRIP CABLE JACKET BACK 2 INCHES FROM END OF CONDUCTORS. BE CAREFUL NOT TO CUT BRAID.
3. CUT BRAID APPROXIMATELY 1/2 INCH FROM END OF CABLE JACKET.
4. FLARE BRAID AND SLIDE INNER FERRULE UNDER IT. MAKE SURE INNER FERRULE BUTTS AGAINST CABLE JACKET.
5. SLIDE OUTER FERRULE OVER INNER FERRULE AND BRAID.
6. CRIMP THE FERRULES USING AMP CRIMP TOOL P/N 91238-1 WITH DIE ASSEMBLY P/N 543013-7.
7. CRIMP CONTACTS TO CONDUCTORS. INSERT CONTACTS INTO REAR OF CONNECTOR IAW APPROPRIATE PINNING DIAGRAM.
8. POSITION ONE HALF OF BACKSHELL ON CABLE AND CONNECTOR. ENSURE THAT THE FLANGE OF THE CONNECTOR IS BEHIND THE FLANGE GRIPPER OF BACKSHELL AND THAT THE FERRULE IS POSITIONED BETWEEN THE TWO STRAIN RELIEF BARS OF THE BACKSHELL.
9. POSITION THE OUTER HALF OF THE BACKSHELL ON TOP OF THE CABLE AND SECURE WITH ATTACHING HARDWARE.

#### FIGURE 9 ONLY

10. INSERT SCREW THROUGH LATCH AND THEN THROUGH BOTTOM OF BACKSHELL.
11. SECURE LATCH USING WASHERS AND NUTS.

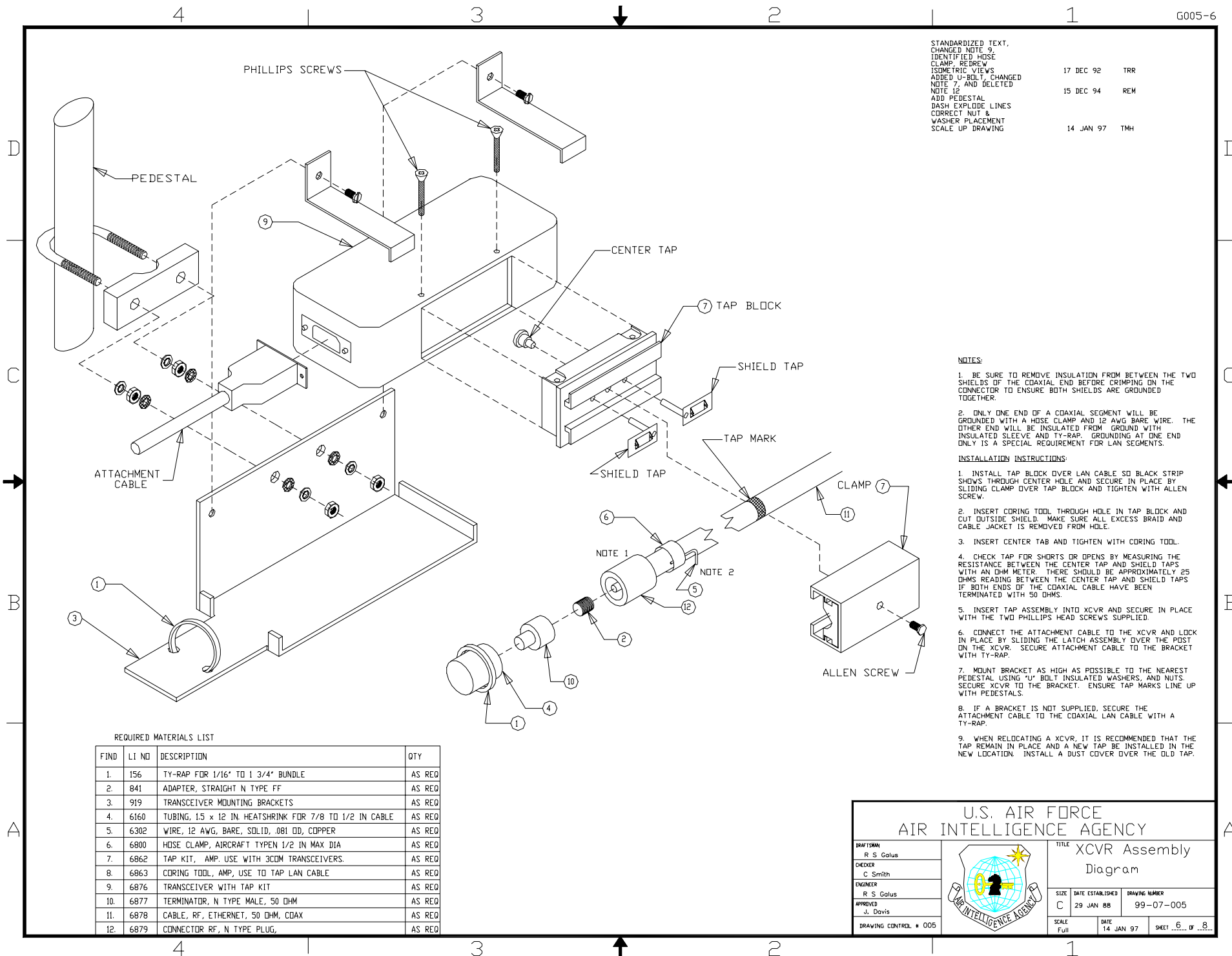
### U.S. AIR FORCE AIR INTELLIGENCE AGENCY

DRAWINGMAN  
C C Brewer  
CHECKER  
C Smith  
ENGINEER  
R S Gallus  
APPROVED  
J. Davis  
DRAWING CONTROL # 005



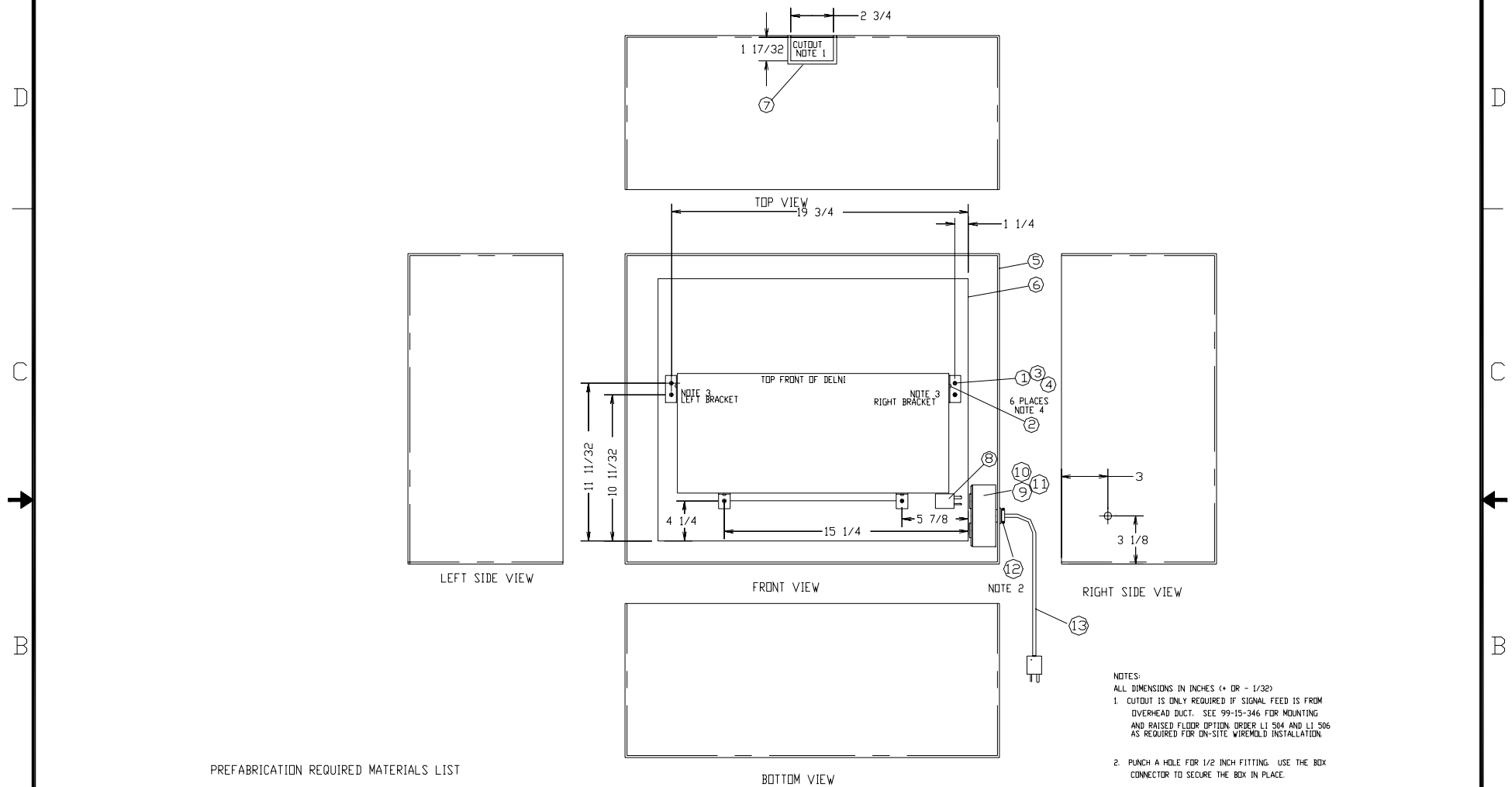
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Attachment Cables  
Assembly Diagram  
SIZE  
C  
DATE ESTABLISHED  
29 Jan 97  
DRAWING NUMBER  
99-07-005  
SCALE  
Full  
DATE  
30 Dec 96  
SHEET  
5 OF 8

G005-6



UPDATED NOTES

30 DEC 96 TMH



## PREFABRICATION REQUIRED MATERIALS LIST

FIND	L/I	DESCRIPTION	QTY
1	1778	10-32 X 1/2 INCH SCREW	6
2	47	6-32 X 1/2 INCH SCREW	4 OR 8
3	1781	#10 FLAT WASHER	6
4	103	#10 LOCK WASHER	6
5	972	HOFFMAN BOX 24 X 24 X 8	1
6	973	HOFFMAN PANEL 21 X 21	1
7	113	GROMMET MATERIAL	A/R
8	647	SURGE PROTECTOR EMI FILTER	A/R
9	490	2 X 4 JUNCTION BOX	1
10	310	DUPLEX OUTLET	1
11	497	DUPLEX OUTLET COVERPLATE	1
12	1440	1/2 INCH CABLE CLAMP	1
13	633	POWER CABLE	1

- NOTES:
- ALL DIMENSIONS IN INCHES (+ OR - 1/32)
  - CUTOUT IS ONLY REQUIRED IF SIGNAL FEED IS FROM OVERHEAD DUCT. SEE 99-15-346 FOR MOUNTING AND RAISED FLOOR OPTION. ORDER LI 504 AND LI 506 AS REQUIRED FOR ON-SITE WIREMOLD INSTALLATION.
  - PUNCH A HOLE FOR 1/2 INCH FITTING. USE THE BOX CONNECTOR TO SECURE THE BOX IN PLACE.
  - SEE SH 9 FIG. 12 OR 13 FOR BRACKET FABRICATION.
  - DRILL AND TAP FOR 10/32 SCREW SIX PLACES AS SHOWN FOR SUPPORT BRACKETS. SIDE BRACKETS ATTACH TO DELNI USING FOUR SCREWS (LI 47) PER DELNI. REAR BRACKETS ATTACH BY REMOVING AND REUSING EXISTING COVER SCREWS.

<b>U.S. AIR FORCE</b> <b>AIR INTELLIGENCE AGENCY</b>		<b>DELNI BOX</b> <b>Mounting</b> <b>(Single or Double)</b>	
DRAFTSMAN C. C. Brewer	CHECKER D. L. Fackrell	SIZE C	DATE ESTABLISHED 29 Jan 88
ENGINEER R. S. Galus	APPROVED J. Davis	DRAWING NUMBER 99-07-005	SCALE Full
DRAWING CONTROL # 005	DATE 30 DEC 97	SHEET 7 OF 8	

FIG 12  
DOUBLE MOUNTING BRACKETS

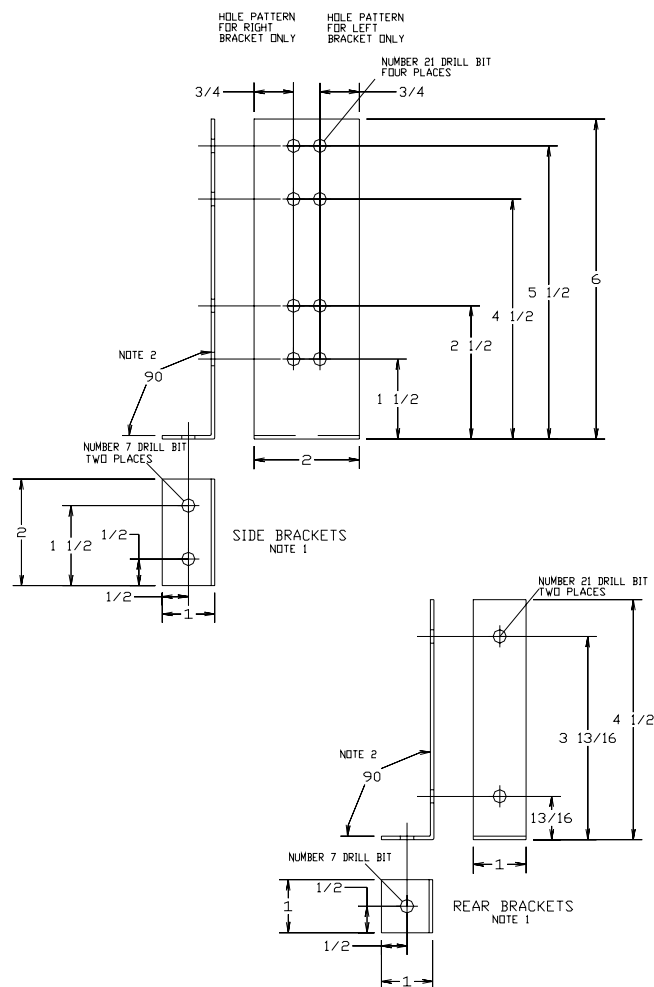
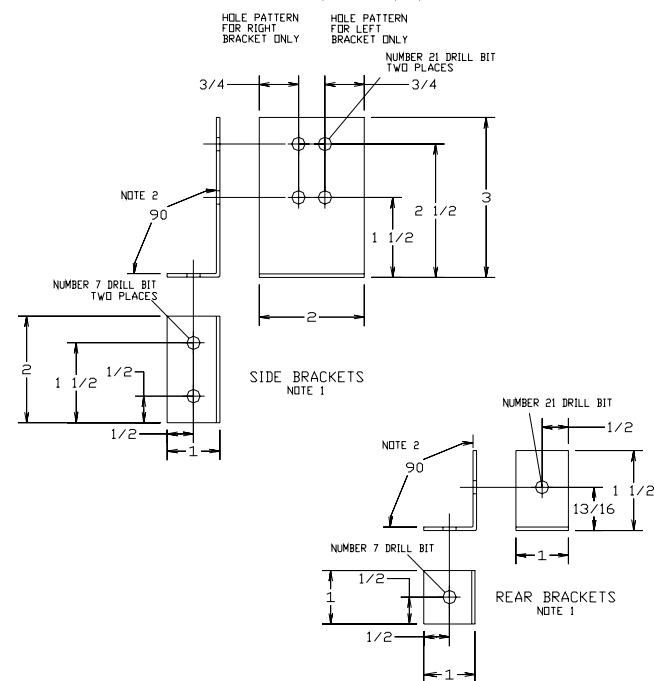


FIG 13  
SINGLE MOUNTING BRACKETS

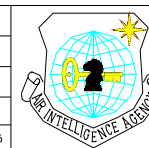


#### NOTES

- ALL DIMENSIONS IN INCHES (+ OR - 1/32)  
ANGLE TOLERANCE + OR - 1/2 DEGREE  
1. ONE LEFT SIDE, ONE RIGHT SIDE AND TWO REAR BRACKETS ARE REQUIRED FOR EITHER APPLICATION. SIDE BRACKETS HAVE DIFFERENT HOLE PATTERNS TO ALLOW FLUSH MOUNTING. USE ONLY ONE VERTICAL PATTERN PER BRACKET. USE .062 GAUGE ALUMINUM (CL 1792).  
2. BEND ALLOWANCE IS 9/64 INCH.

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAWN  
C. C. Brewer  
CHECKED  
D. L. Fackrell  
ENGINEER  
R. S. Galus  
APPROVED  
J. Davis  
DRAWING CONTROL # 005



TITLE  
DELNI Mounting  
Brackets

SIZE  
C  
DATE ESTABLISHED  
29 Jan 88  
DRAWING NUMBER  
99-07-005  
SCALE  
Full  
DATE  
10 Jun 96  
SHEET  
8 OF 8

REVISED DDS RX & DTR PIN-OUTS 31 JAN 92 CS  
MOVED DRAWING FROM CATEGORY 14 7 JAN 97 TMH

## NOTES:

1. CRIMP ALL SHIELDS AND UNUSED WIRES BETWEEN FERRULES USING CRIMPER DIE ASSEMBLY P/N 543013-3 (DIE MARKC1).
2. USE THE GREEN WIRE OF THE GRN/BLK PAIR FOR CHASSIS GND CONNECTION.
3. CFIS WILL SPECIFY CABLE LENGTHS.
4. UNUSED WIRES AND SHIELDS ARE FOLDED BACK AND COMPRESSED INTO THE CABLE OPENING OF THE BACKSHELL FOR GROUNDING.
5. W1 THRU W4 ARE 4 CABLES TERMINATED AT ONE CONNECTOR. EACH LAN PROTOCOL TRANSLATOR REQUIRES TWO SUCH CONFIGURATIONS AS SHOWN IN FIG. 2.
6. ALL TOTAL, THERE ARE 3 LAN PROTOCOL TRANSLATORS(LPT). LPT #2 IS SERVICED BY DDS 318 MULTIPLEXER CHANNELS J9-J16 AND LPT #3 IS SERVICED BY CHANNELS J17-J24.

## REQUIRED MATERIAL LISTING

FIND #	RML LT	DESCRIPTION	QTY
1	811	BELDEN CABLE P/N 88777	AS REQ
2	833	RECEPTACLE DB25S 205207-1	6EA
3	6875	CONTACT SOCKET MS39029/63-368	150EA
4	978	INNER FERRULE 2-745129-1	24EA
5	979	OUTER FERRULE 745130-8	24EA
6	6880	PLUG DB25P M24308/4-261	24EA
7	6865	RFT BACKSHELL 745173-3	24EA
8	57	B/S AMP 745173-1	6EA
9	6874	CONTACT PIN M39029/164-369	600EA

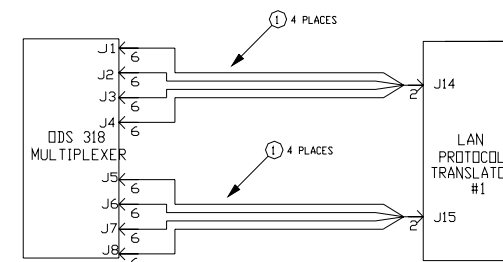


FIG. 2 SIGNAL FLOW (NOTE 6)

## LEGEND

→ CABLE WITH CONNECTOR

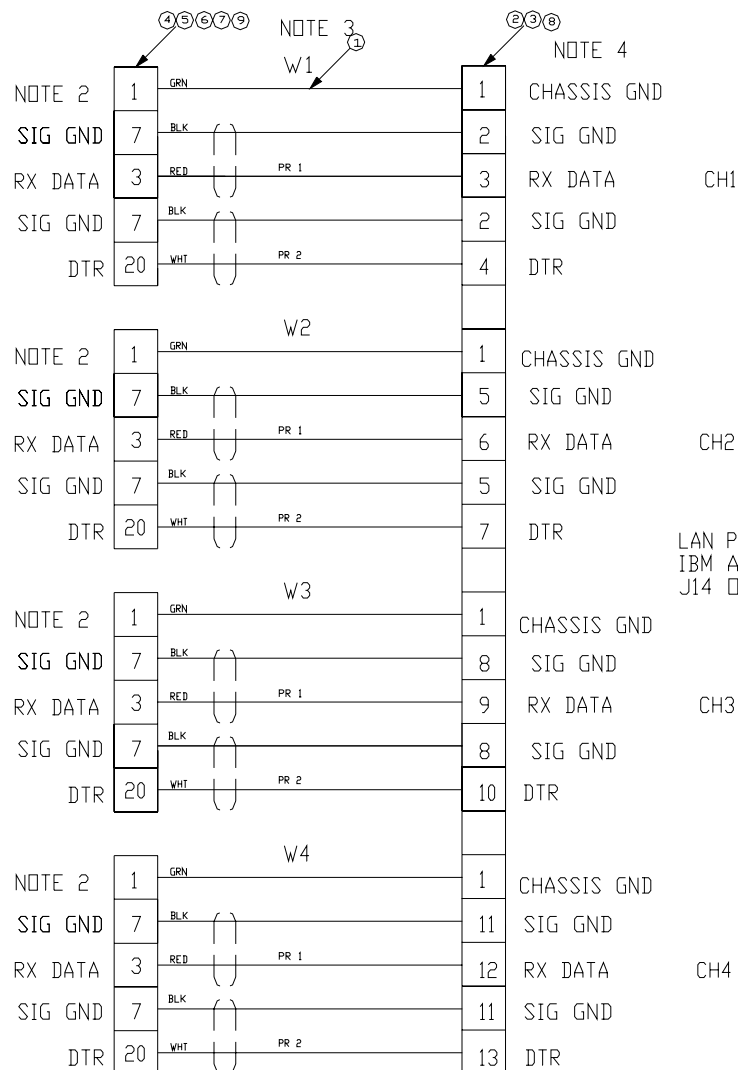


FIG. 1 TYPICAL CABLE CONFIGURATION (NOTE 5)

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DRAFTSMAN C. Brewer		TITLE DDS 318 Fiber Optic Multiplexer to LAN Protocol Translator	
CHECKER J. Lacy		SIZE C	
ENGINEER C. Smith		DATE ESTABLISHED 14 JUN 91	
APPROVED D. Duff		DRAWING NUMBER 99-07-068	
DRAWING CONTROL # 068		SCALE Full	
		DATE 7 JAN 97	
		SHEET 1 OF 1	

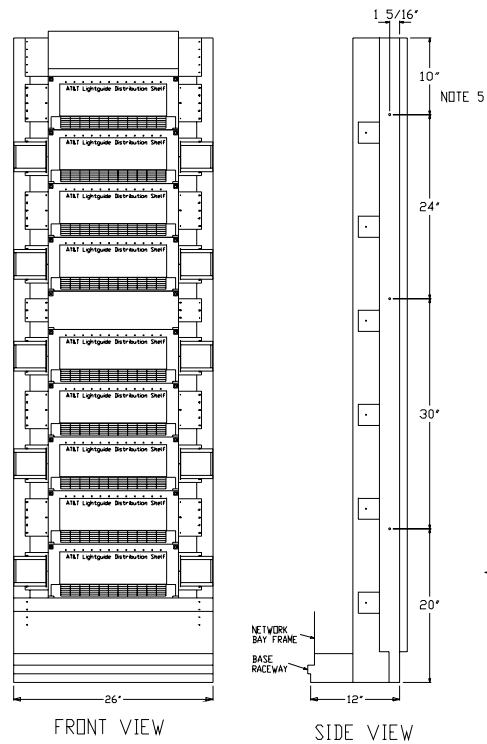
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ES 99-005 CHANGE L/1 59 FROM 2 1/2" TO 2" 7 JAN 97 TMH  
10 DEC 99 JD

D

C

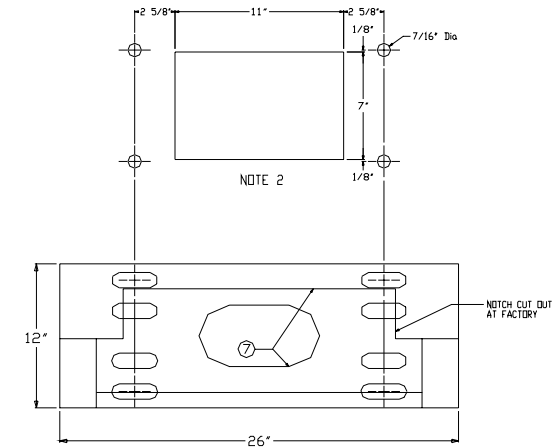
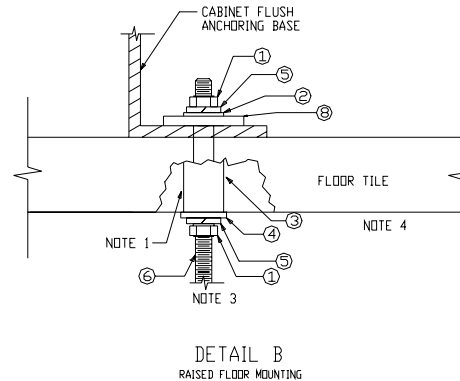
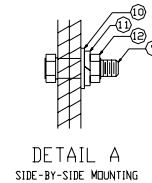
B

A



## REQUIRED MATERIALS LIST

FIND	L1 NO	DESCRIPTION	QTY
1.	0105	3/8" HEX NUT	8 EA
2.	0086	3/8" X 7/8" OD FLAT WASHER	4 EA
3.	0484	1/2" EMT	AS REQ
4.	7731	3/8" X 1" OD FLAT WASHER	4 EA
5.	0998	3/8" LOCK WASHER	8 EA
6.	0991	3/8-16 THREADED ROD	NOTE 4 AS REQ
7.	0113	GROMMET	105 IN
8.	0102	SQUARE WASHER P-1063	4 EA
9.	0059	1/4"-20 X 2" BOLT	NOTE 6 3 EA
10.	0079	1/4" FLAT WASHER	NOTE 6 3 EA
11.	0104	1/4" LOCK WASHER	NOTE 6 3 EA
12.	0106	1/4"-20 NUT	NOTE 6 3 EA



## NOTES:

\* ALL DIMENSIONS ARE IN INCHES (+/- 1/32")

1. CUT CONDUIT SPACERS TO EXTEND APPROXIMATELY 1/8 INCH BELOW REINFORCEMENT RIBS OF FLOOR TILE. CONDUIT SPACER IS NOT REQUIRED ON FLAT BOTTOMED FLOOR TILES.
2. CUT A 7" X 11" HOLE AND DRILL FOUR 7/16" DIA HOLES IN FLOOR TILE AS INDICATED IN DETAIL C.
3. SEE 99-06-325 SHEET 3 FOR ATTACHING HANGER ROD TO ANCHORING GRID.
4. WHEN SECURING TO SUB-FLOOR (HARD FLOOR) USE THREADED STUD (L/1 1074) IN PLACE OF THREADED ROD STOCK (L/1 991) AND OTHER MATERIALS SHOWN FOR UNDER RAISED FLOOR.
5. WHEN INSTALLING MULTIPLE RACKS, DRILL THREE 1/4" HOLES AS INDICATED IN SIDE VIEW IN THE FACING SIDES. CONNECT RACKS AS INDICATED IN DETAIL A.
6. QUANTITIES REQUIRED BETWEEN EACH PAIR OF RACKS TO BE BOLTED TOGETHER.

DRAFTER P. M. Spalenka CHECKER J. J. Grant ENGINEER P. M. Spalenka APPROVED D. Duff DRAWING CONTROL # 289			TITLE Fiber Optic Distribution Rack Lightguide Cross-Connect (LGX) SIZE C DATE ESTABLISHED 28 OCT 94 DRAWING NUMBER 99-07-289 SCALE 3/32 DATE 10 DEC 99 SHEET 1 OF 1
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G395-1

CONNECTORS				
TYPE	MODE	L/I	FURRULE	FIBER OD/CABLE OD
SMA/Epoxy	MULTI	0987	METAL	125 $\mu$ M/3.0MM
SMA/Epoxy	MULTI	6311	METAL	125 $\mu$ M/3.0MM
ST/Epoxy	MULTI	0988	CERAMIC	125 $\mu$ M/3.0MM
ST/Epoxy	MULTI	1223	METAL	125 $\mu$ M/3.0MM
ST/HotMelt	MULTI	1216	CERAMIC	125 $\mu$ M/3.0MM
SC/HotMelt	MULTI	1430	CERAMIC	125 $\mu$ M/3.0MM

CABLES				
Dual, Zip	MULTI	1227	Plenum	62.5/125 $\mu$ M//2.44MM
Dual, Zip	MULTI	0989	Plenum	50/125 $\mu$ M//2.42MM

CABLE TIES SEE NOTE 4		
L/I	P/N	DESCRIPTION
1441	HLT21-X0	BLACK VELCRO, 8 INCH
1444	HLT21-X2	RED VELCRO, 8 INCH
1445	HLT21-X4	YELLOW VELCRO, 8 INCH
1450	HLT31-X0	BLACK VELCRO, 12 INCH
1456	HLT31-X2	RED VELCRO, 12 INCH
1457	HLT31-X4	BLACK VELCRO, 12 INCH

## STEPS:

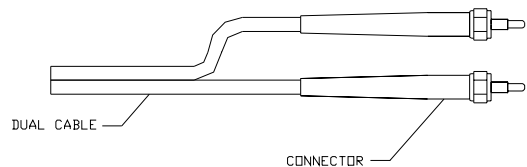
CONNECTOR MOUNTING - AFTER PREPARATION, THE CABLE MUST BE CAREFULLY MOUNTED ONTO THE CONNECTOR. THE FOLLOWING PREVIEW OF THESE PROCEDURES WILL ILLUSTRATE THE SIGNIFICANT DIFFERENCES BETWEEN THE EPOXY AND THE HOT MELT TYPE CONNECTORS.

## EPOXY CONNECTORS

- INVENTORY AND CLEAN - ENSURE ALL PARTS ARE AVAILABLE AND CLEAN USING ALCOHOL AND COMPRESSED AIR. IT IS PARTICULARLY IMPORTANT TO MAKE SURE THE FIBER HOLE IN THE CONNECTOR IS CLEAR.
- APPLY EPOXY - THE EPOXY (U 1139) MUST BE MIXED AND APPLIED TO THE APPROPRIATE PARTS OF THE CONNECTOR AND CABLE.
- MOUNT THE FIBER - THE FIBER MUST BE PLACED INTO THE CONNECTOR, BEING CAREFUL NOT TO BREAK IT. IF THE FIBER BREAKS, THE CONNECTION WILL BE LOST.
- CRIMP THE CONNECTOR - USE CRIMPERS TO CRIMP THE SLEEVE ON THE CONNECTOR BODY, ENSURING THE KEVLAR IS BETWEEN THE SLEEVE AND THE BODY.
- CURE THE EPOXY - EACH TYPE OF EPOXY HAS A DIFFERENT CURE TIME. WAIT UNTIL THE EPOXY IS CURED BEFORE ATTEMPTING TO POLISH.

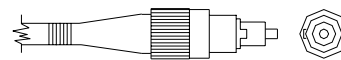
## 3M HOT MELT

- HEAT CONNECTOR IN OVEN - AFTER THE OVEN WARMS UP, PLACE THE CONNECTOR IN A CONNECTOR HOLDER AND PLACE IN THE OVEN FOR ONE MINUTE, AND NO MORE THAN TEN MINUTES.
- MOUNT THE FIBER - CAREFULLY PLACE THE FIBER IN THE CONNECTOR. IF THE FIBER DOES NOT ENTER EASILY, THE EPOXY HAS NOT HEATED LONG ENOUGH TO ACHIEVE ITS LIQUID STATE.
- COOL THE CONNECTOR - SECURE THE CABLE IN THE CONNECTOR HOLDER AND PLACE IN THE COOLING STAND. ALLOW THE CONNECTOR TO COOL FOR THREE - FOUR MINUTES BEFORE POLISHING.



### SAMPLE FIBER OPTICS CABLE AND CONNECTOR

SEE T.O. 31-10-34 FOR CONSTRUCTION DETAILS.



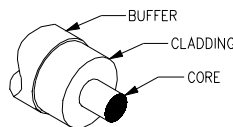
FC TYPE



ST TYPE



SC TYPE



## NOTES:

THE FOLLOWING BASIC GUIDELINES APPLY TO INSTALLATION OF FIBER OPTIC CABLE. SEE T.O. 31-10-34 FOR SPECIFIC DETAILS AND FOR CONNECTOR ASSEMBLY METHODS.

- TENSILE LOAD (PULLING FORCE) MUST NOT EXCEED SPECIFIED LIMITS TO AVOID CRACKING OF THE FIBER. PULLING CABLE IN CONDUIT REQUIRES SPECIAL PROCEDURES.
- CABLES MUST NOT BE KINKED IN ANY WAY.
- CABLES MUST NOT BE CRUSHED BY COVERING WITH HEAVY CABLES OR OVER TIGHTENING CABLE TIES, ETC.
- REDUCE TENSILE LOADS IN VERTICAL CABLE RUNS BY BEGINNING AT THE TOP AND USING CABLE TIES AT REGULAR INTERVALS.
- OBSERVE MINIMUM BEND RADIUS. THIS IS 10 TIMES THE OUTSIDE DIAMETER OF THE CABLE. AFTER THE CABLE HAS BEEN INSTALLED AND THE TENSILE LOAD HAS BEEN REDUCED, DURING INSTALLATION WHEN THE CABLE IS UNDER LOAD, THE BEND RADIUS INCREASES TO 20 TIMES THE DIAMETER.
- DO NOT USE CABLES WITH METAL STRENGTH MEMBERS.
- USE PLENUM RATED CABLES IN AIR CONDITIONING OR VENTILATION DUCTS OR SPACES.
- INNER DUCT (LI'S 1207 & 1293) WILL BE USED WHERE FIBER OPTIC CABLE REQUIRES ADDITIONAL PROTECTION SUCH AS INSIDE DUCT AND UNDER RAISED FLOORING.
- INSTALLATION PROCESS CONSIST OF CABLE PREPARATION, CONNECTOR MOUNTING, AND CONNECTOR POLISHING. REFER TO MANUFACTURE'S INSTRUCTIONS TO PERFORM THESE CRITICAL STEPS:
  - MEASUREMENTS - EACH TYPE OF CONNECTOR REQUIRES DIFFERENT MEASUREMENTS FOR CABLE INSTALLATION. ALL MEASUREMENTS MUST BE EXTREMELY ACCURATE TO ENSURE THE CONNECTOR IS MOUNTED PROPERLY.
  - JACKET REMOVAL - CAREFULLY REMOVE THE JACKET WITHOUT DAMAGING THE FIBER. JACKET STRIPPERS, X-ACTO KNIFE, OR CABLE SHEATH KNIFE MAY BE USED.
- CAUTION: EXERCISE EXTREME CARE WHILE USING SHARP-EDGED TOOLS.
- BUFFER REMOVAL - USE BUFFER STRIPPERS OR CHEMICAL STRIPPER TO CAREFULLY REMOVE THE BUFFER, BEING SURE NOT TO DAMAGE THE FIBER.
- KEVLAR REMOVAL - USE THE SPlicer'S SCISSORS OR KEVLAR CUTTERS TO TRIM THE KEVLAR TO THE PROPER LENGTH. THE KEVLAR PROVIDES ADDITIONAL STRENGTH BETWEEN THE CABLE AND CONNECTOR.
- FIBER CLEANING - USE ISOPROPYL ALCOHOL AND A LINT-FREE CLOTH TO CAREFULLY CLEAN THE FIBER. ALWAYS CLEAN USING ONE OR TWO STROKES FROM THE JACKET TO THE FIBER END. CLEANING FROM THE FIBER END TOWARD THE JACKET COULD RESULT IN A BROKEN FIBER.
- THE FOLLOWING PARAMETERS WILL BE USED FOR TESTING FIBER OPTIC CABLES:
 

CONNECTOR LOSS:	0.5 db PER MATED PAIR
SPLICE LOSS:	0.2 db PER SPLICE
FIBER LOSS:	MULTIMODE: 3 db/km @ 850nm, 1 db/km @ 1300nm
	SINGLEMODE: 0.4 db/km @ 1310nm, 0.4 db/km @ 1550 nm

### U.S. AIR FORCE AIR INTELLIGENCE AGENCY

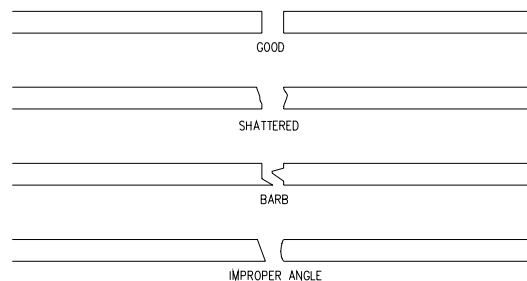
DRAFTSMAN P. M. Spolenka		TITLE Fiber Optics Connector/Cable Cross Reference	
CHECKER R. E. Muzzy		SIZE C	DRAWING NUMBER 99-07-395
ENGINEER J. Davis		DATE ESTABLISHED 1 May 92	DATE 3 Feb 99
APPROVED J. Davis		SHEET 1 OF 3	
DRAWING CONTROL # 395			



G395-2

MOVED FROM CATEGORY 17 AND  
UPDATED NOTES

7 JAN 97 TMH



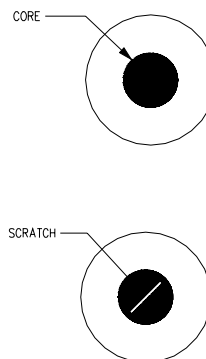
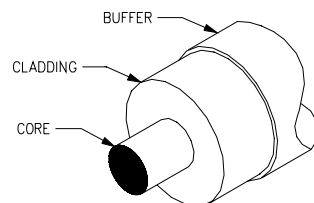
CLEAVED FIBERS

FIBER CLEAVING - BARE FIBERS MUST BE CUT TO THE PROPER LENGTH FOR SPLICING. NUMEROUS CLEAVING TOOLS ARE AVAILABLE FOR THIS PURPOSE, AND ALL USE THE SCORE AND BREAK METHOD FOR CUTTING FIBERS. SPLICING REQUIRES A CLEAVE VERY CLOSE TO PERFECT, AND IT TAKES PRACTICE AND EXPERIENCE TO ACHIEVE A PERFECT CLEAVE. THE QUALITY OF THE CLEAVES HAS A GREAT DEAL TO DO WITH THE OVERALL db LOSS OF A FIBER OPTIC LINK. THERE ARE TWO MAIN THINGS TO CHECK FOR WHEN EVALUATING THE QUALITY OF A CLEAVED FIBER:

A. CHECK THE END SURFACE ANGLE FOR A PERFECTLY SQUARE CUT. DEPENDING UPON THE APPLICATION, ANGLES MEASURING 1 TO 2 DEGREES DIFFERENCE ARE GENERALLY ACCEPTABLE. PROBLEMS MAY ARISE IF A CLEAVE HAS AN ANGLE OF 3 DEGREES OR MORE.

B. CHECK THE FIBER END FOR SMOOTHNESS AND A LACK OF BLEMISHES SUCH AS THOSE LISTED ABOVE.

EVALUATION OF THE CLEAVED FIBER ENDS CAN BE ACCOMPLISHED BY OBSERVATION THROUGH A MICROSCOPE.



## CONNECTOR POLISHING

## SMA HAND POLISH

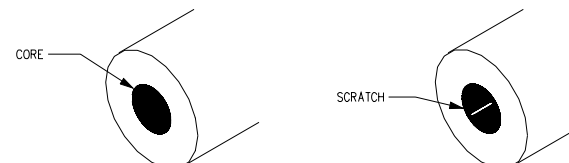
- CLEAVE THE FIBER - CLEAVE THE FIBER USING THE HAND-HELD CLEAVER. THE FIBER SHOULD BE CLEAVED FLUSH WITH THE EPOXY BEAD.
- COURSE POLISH - POLISH THE FIBER ON THE COURSE LAPPING FILM FOR ABOUT EIGHT TO TEN "FIGURE-EIGHT" STROKES. USE 12um TO 15um LAPPING FILM (LI 957).
- MEDIUM POLISH - CONTINUE WITH ANOTHER EIGHT TO TEN "FIGURE-EIGHT" STROKES USING 1um TO 3um LAPPING FILM (LI 958).
- FINE POLISH - CONTINUE WITH "FIGURE-EIGHT" STROKES UNTIL A SMOOTH FINISH IS ACHIEVED. PERIODICALLY INSPECT THE FINISH WITH A MICROSCOPE TO ENSURE NO DAMAGE IS CAUSED BY POLISHING TOO MUCH. NORMALLY, USE .3um FILM (LI 956).
- INSPECTION - CEASE POLISHING WHEN A GOOD POLISH IS OBSERVED IN THE MICROSCOPE.

## SMA MACHINE POLISH

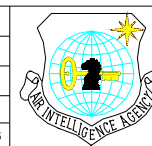
- CLEAVE THE FIBER - CLEAVE FLUSH WITH THE EPOXY BEAD.
- COURSE POLISH - PERFORM THE COURSE POLISH ON THE RIGHT POLISHING PLATEN FOR ONE MINUTE.
- FINE POLISH - PERFORM THE FINE POLISH ON THE LEFT POLISHING PLATEN FOR ONE MINUTE.
- INSPECTION - INSPECT THE SURFACE WITH A MICROSCOPE, AND RETURN CONNECTOR TO THE FINE POLISH FOR SHORT PERIODS OF TIME IF MORE POLISHING IS REQUIRED.

## 3M HOT MELT

- CLEAVE THE FIBER - CLEAVE FLUSH WITH THE EPOXY BEAD.
- POLISH THE FIBER - BEGINNING WITH VERY LIGHT PRESSURE, UNTIL REACHING THE EPOXY. APPLY PRESSURE UNTIL THE EPOXY HAS BEEN REMOVED FROM THE CONNECTOR SURFACE.
- INSPECTION - PERIODIC AND FINAL INSPECTIONS ARE CONDUCTED USING A MICROSCOPE.

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DRAFTSMAN	P. M. Spalenka
CHECKER	R. E. Muzzy
ENGINEER	P. M. Spalenka
APPROVED	D. Duff
DRAWING CONTROL	# 395



TITLE Fiber Optic Connector Polishing		
SIZE C	DATE ESTABLISHED 1 MAY 92	DRAWING NUMBER 99-07-395
SCALE Full	DATE 25 AUG 98	SHEET ... 2 ... OF ... 3

MOVED FROM CATEGORY 17 7 JAN 97 TMH

## NOTES:

REFER TO MANUFACTURER SPECIFICATION SHEETS AND T.O. 31-10-34 FOR CONNECTOR ASSEMBLY METHODS AND DETAILS.

THE INSTALLATION OF FIBER OPTIC CABLE IS BASICALLY THE SAME AS IT IS FOR METALLIC CABLE. HOWEVER, SOME ADDITIONAL INSTALLATION PROCEDURES AND PRECAUTIONS MUST BE OBSERVED. IT IS ESSENTIAL TO PROTECT THE CABLE WHILE IN THE INSTALLATION ENVIRONMENT.

## 1. INSTALLATION CONSIDERATIONS

TENSILE STRENGTH AND BEND RADIUS - MECHANICAL PARAMETERS USED IN CHARACTERIZING FIBER CABLE. EXCEEDING A CABLE'S MAXIMUM TENSILE STRENGTH OR MINIMUM BEND RADIUS WILL INCREASE THE ATTENUATION AND CHANGE THE PERFORMANCE CHARACTERISTICS OF THE OPTICAL CABLE.

A. ATTENUATION LOSS ATTRIBUTED TO TENSILE STRENGTH IS REVERSIBLE AS LONG AS THE MAXIMUM TENSILE STRENGTH LOAD LIMIT IS NOT EXCEEDED. NEVER PLACE MORE THAN 450 LBS. PULLING FORCE ON A CABLE DURING INSTALLATION.

B. EXCEEDING A CABLE'S MINIMUM BEND RADIUS LEADS TO MICROBENDING ATTENUATION LOSSES AND, ULTIMATELY, TO BREAKAGE AND DESTRUCTION OF THE CABLE. THE MINIMUM RECOMMENDED BENDING RADIUS FOR FIBER CABLE IS 10 TIMES (NO LOAD) AND 20 TIMES (LOAD) THE OUTSIDE DIAMETER OF THE CABLE.

WEIGHT - THE WEIGHT OF A FIBER CABLE IS GENERALLY NOT AN INSTALLATION PROBLEM IN HORIZONTAL RUNS AS LONG AS THE TENSILE STRENGTH LIMIT IS NOT EXCEEDED. CABLE CLAMPS OR HANGERS MAY BE REQUIRED ON VERTICAL RUNS WHERE THE CABLE'S HANGING WEIGHT IS CONSIDERED AS A TENSILE LOAD.

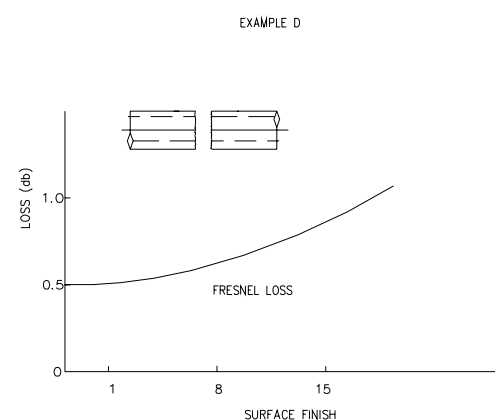
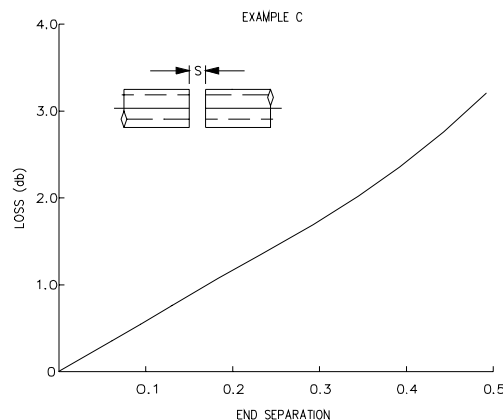
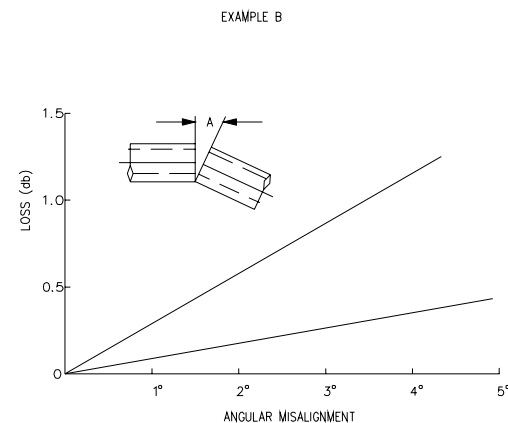
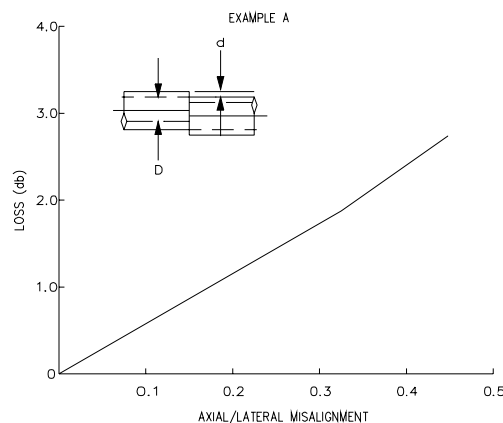
**CAUTION:** WHEN TIGHTENING CABLE CLAMPS, THE CLAMPS MUST NOT COMPRESS THE OUTER JACKET OR MICROBENDING OF THE FIBER MAY OCCUR.

CONTINUITY TESTS - THE CABLE SHOULD BE TESTED FOR CONTINUITY PRIOR TO INSTALLATION. IF BOTH ENDS OF THE CABLE ARE ACCESSIBLE, MEASUREMENTS CAN BE MADE WITH AN OPTICAL POWER METER. IF ONLY ONE END IS ACCESSIBLE, MEASUREMENTS MUST BE MADE WITH AN OPTICAL TIME DOMAIN REFLECTOMETER (OTDR).

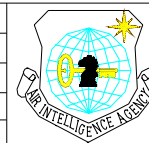
RECORDS KEEPING - THE CONDITION OF EVERY LENGTH OF OPTICAL FIBER CABLE AND EVERY SPlice MUST BE TESTED AND RECORDED. THE LOCATION AND QUALITY OF EVERY SPlice AND CONNECTOR MUST BE DOCUMENTED AS THE INSTALLATION PROGRESSES. THIS PROVIDES A BENCHMARK FOR THE EVOLUTION OF THE SYSTEM WITH TIME AND PROVIDES THE BASIC SYSTEM REFERENCE FOR PREVENTIVE AND CORRECTIVE MAINTENANCE TEAMS. TRUE SPlice LOSS CAN ONLY BE DETERMINED BY LOOKING THROUGH A SPlice WITH AN OTDR FROM BOTH DIRECTIONS.

2. THE FOUR CAUSES OF CONNECTOR LOSSES ALSO APPLY TO FIBER-TO-FIBER CONNECTIONS MADE DURING THE ACTUAL SPLICING OF OPTICAL FIBERS REGARDLESS OF THE METHOD OF SPLICING USED.

- EXAMPLES:
- AXIAL/LATERAL MISALIGNMENT - IDEALLY, THE LONGITUDINAL AXES OF THE FIBER CORES WILL MEET PERFECTLY. REALISTICALLY, THE AXES MUST BE ALIGNED TO WITHIN 5 PERCENT OF THE SMALLER FIBER DIAMETER.
  - ANGULAR MISALIGNMENT - IDEALLY, THE FIBER ENDS ARE PARALLEL WHEN CONNECTED. REALISTICALLY, THE ANGLE MUST BE CONTROLLED, AND BE WITHIN 2 DEGREES. TYPICALLY, THE ALIGNMENT MECHANISM WHICH SOLVES AXIAL/LATERAL MISALIGNMENT ALSO SOLVES ANGULAR MISALIGNMENT.
  - END SEPARATION - IDEALLY, THE FIBER ENDS SHOULD TOUCH. REALISTICALLY, THE ENDS ARE SEPARATED SO THEY DO NOT RUB AND DAMAGE EACH OTHER DURING CONNECTING. SEPARATIONS OF .001 TO .005 INCHES ARE ACCEPTABLE. LOSSES FROM END SEPARATION ARE LESS CRUCIAL THAN AXIAL/LATERAL AND ANGULAR MISALIGNMENT, AND CAN VIRTUALLY BE ELIMINATED BY THE USE OF INDEX MATCHING FLUIDS.
  - SURFACE FINISH - THE ENDS OF THE FIBERS MUST BE SMOOTH AND FLAT. MOST PLASTIC FIBERS MUST BE POLISHED SMOOTH. GLASS FIBERS CAN BE SCRIBED AND BROKEN, AND ARE OFTEN POLISHED. ANOTHER TERM YOU MAY HEAR ASSOCIATED WITH CONNECTOR LOSSES IS "FRESNEL LOSS" OR "FRESNEL REFLECTION." THESE LOSSES OCCUR AT THE AIR-TO-GLASS INTERFACES AT ENTRANCE AND EXIT ENDS OF AN OPTICAL FIBER. CONNECTOR LOSSES CANNOT BE AVOIDED, BUT CAN BE MINIMIZED BY ATTAINING THE SKILLS TO PROPERLY INSTALL AND MAINTAIN THE FIBER CABLES.

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APPROVED  
D. Duff  
DRAWING CONTROL # 395



TITLE  
Fiber Optics  
Connector Related Losses

SIZE C DATE ESTABLISHED 1 MAY 92 DRAWING NUMBER 99-07-395

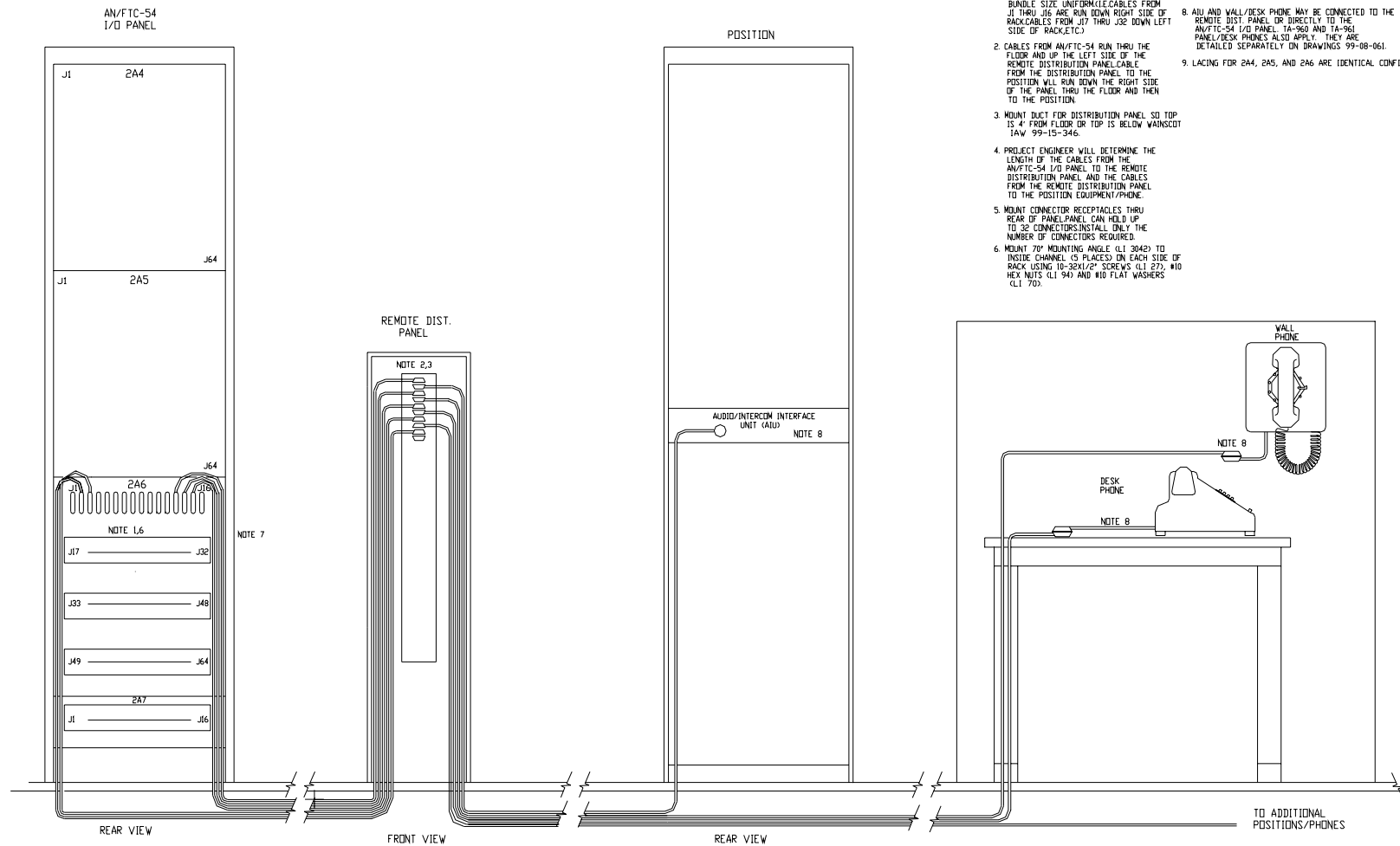
SCALE Full DATE 25 AUG 98 SHEET 3 OF 3

H345-1

CHANGED NOTE 6 AND 8.  
UPDATE NOTES.01 APR 92 CCS  
08 JAN 97 TMH

## NOTES:

1. ALTERNATE CABLE RUNS BETWEEN LEFT SIDE AND RIGHT SIDE OF RACK TO KEEP BUNDLE SIZE UNIFORM (CABLES FROM J1 THRU J64 ARE RUN DOWN RIGHT SIDE OF RACK; CABLES FROM J17 THRU J32 DOWN LEFT SIDE OF RACK, ETC.)
2. CABLES FROM AN/FTC-54 RUN THRU THE FLOOR AND UP THE LEFT SIDE OF THE REMOTE DISTRIBUTION PANEL. CABLE FROM THE DISTRIBUTION PANEL TO THE POSITION WILL RUN DOWN THE RIGHT SIDE OF THE PANEL THRU THE FLOOR AND THEN TO THE POSITION.
3. MOUNT DUCT FOR DISTRIBUTION PANEL SO TOP IS 4" FROM FLOOR OR TOP IS BELOW WAINSCOT (AW 99-15-346).
4. PROJECT ENGINEER WILL DETERMINE THE LENGTH OF THE CABLES FROM THE AN/FTC-54 I/O PANEL TO THE REMOTE DISTRIBUTION PANEL AND THE CABLES FROM THE REMOTE DISTRIBUTION PANEL TO THE POSITION EQUIPMENT/PHONE.
5. MOUNT CONNECTOR RECEPTACLES THRU REAR OF PANEL. PANEL CAN HOLD UP TO 32 CONNECTORS. INSTALL ONLY THE NUMBER OF CONNECTORS REQUIRED.
6. MOUNT 70° MOUNTING ANGLE (L1 3042) TO INSIDE CHANNEL (5 PLACES) ON EACH SIDE OF RACK USING 10-32X1/2" SCREWS (L1 277), #10 HEX NUTS (L1 54) AND #10 FLAT WASHERS (L1 70).
7. SEE 99-15-344 FOR CABLE LACING DETAILS.
8. ALL WALL/DISK PHONE MAY BE CONNECTED TO THE REMOTE DIST. PANEL OR DIRECTLY TO THE AN/FTC-54 I/O PANEL. 1A-960 AND 1A-961 PANEL/DISK PHONES ALSO APPLY. THEY ARE DETAILED SEPARATELY ON DRAWINGS 99-08-061.
9. LACING FOR 2A4, 2A5, AND 2A6 ARE IDENTICAL CONFIGURATION.

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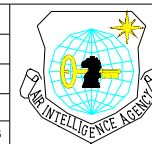
DRAFTSMAN  
C Brewer

CHECKER  
R S Galus

ENGINEER  
D Fackrell

APPROVED  
D. Duff

DRAWING CONTROL # 345



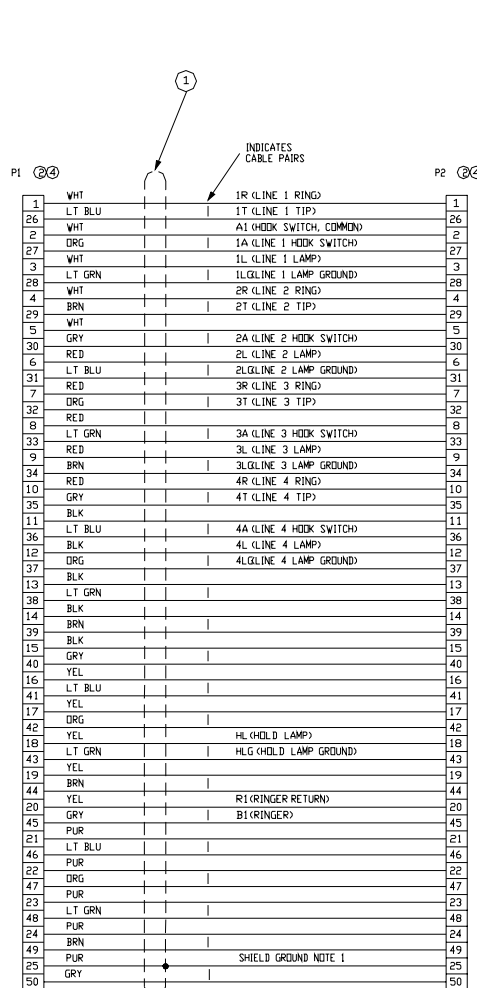
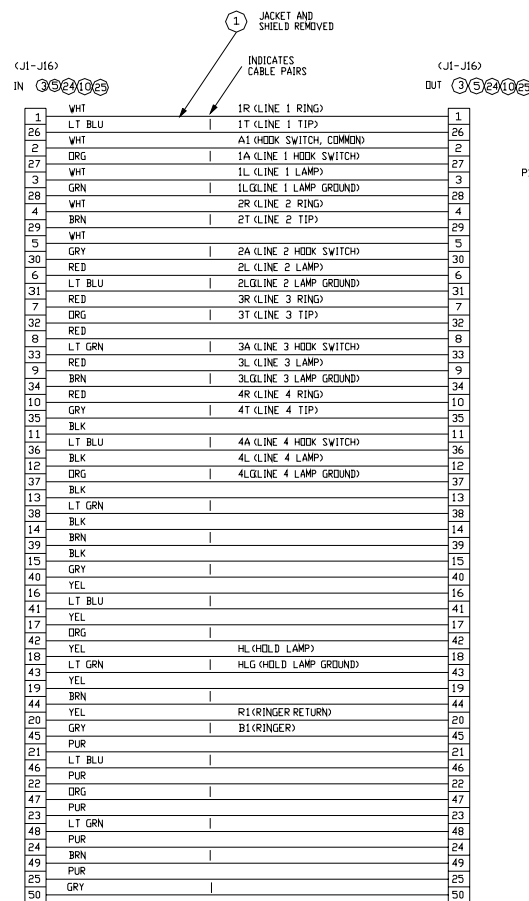
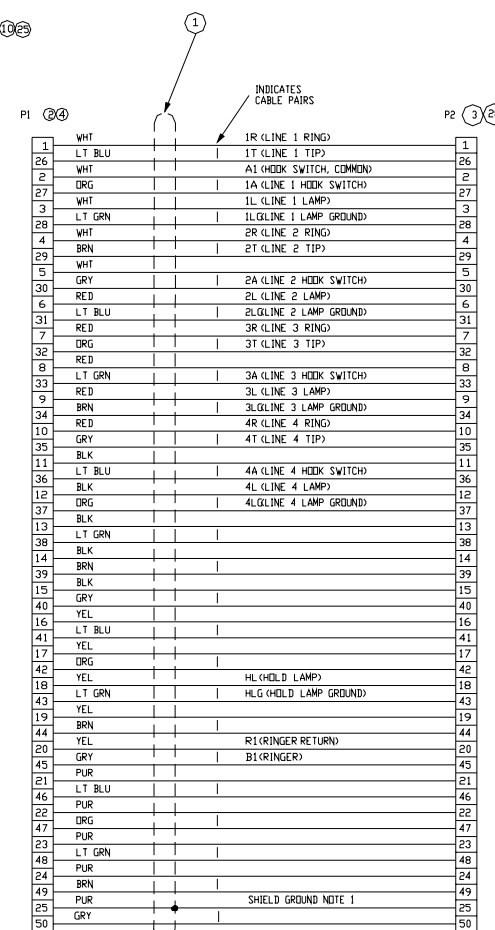
TITLE  
AN/FTC-54  
Remote Dist. Pnl. Cable  
Routing Details

SIZE C DATE ESTABLISHED 01 APR 86 DRAWING NUMBER 99-08-345

SCALE Full DATE 08 JAN 97 SHEET 1 OF 6

CHANGED NOTE 1

01 APR 92 CCS

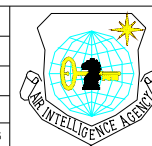
FIG. 1 CABLE FROM AN/FTC-54 I/O PANEL  
TO REMOTE DIST. PANELFIG. 2 REMOTE DIST. PANEL WIRING  
(INPUT TO OUTPUT CONNECTORS)FIG. 3 CABLE FROM AN/FTC-54 I/O PANEL  
OR REM. DIST. PNL. TO WALL/DESK PHONE

## NOTES:

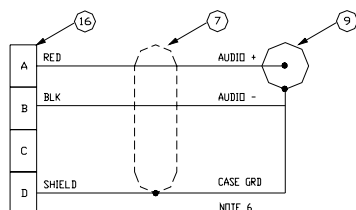
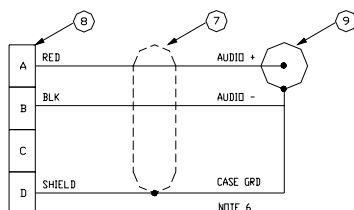
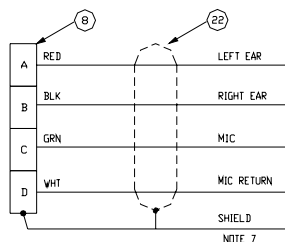
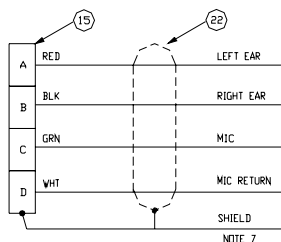
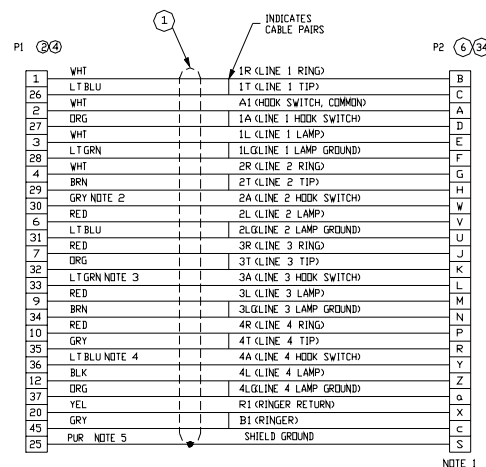
1. SHIELD CONNECTED TO PIN 25, AT P1 AND P2.

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DRAFTSMAN  
C Brewer  
CHECKER  
R S Galus  
ENGINEER  
D Fackrell  
APPROVED  
D. Duff  
DRAWING CONTROL # 345



TITLE  
AN/FTC-54  
I/O Panel, Remote Distribution  
Panel, Wall/Desk Phone  
Cable Fabrication  
SIZE C DATE ESTABLISHED 01 APR 86 DRAWING NUMBER 99-08-345  
SCALE Full DATE 15 MAR 94 SHEET 2 OF 6

FIG.4 J5 & J6 CONNECTOR  
PINNING DETAILS (SEE FIG.9)FIG.5 J7 THRU J12 CONNECTOR  
PINNING DETAILS (SEE FIG.9)FIG.6 J3 CONNECTOR  
PINNING DETAILS (SEE FIG.9)FIG.7 J4 CONNECTOR  
PINNING DETAILS (SEE FIG.9)FIG.8 CABLE FROM AN/FTC-54 I/O PANEL  
OR REM. DIST. PNL. TO AIU

## REQUIRED MATERIALS LIST (TOTAL FOR ALL SHEETS)

FIND NO.	L/I	DESCRIPTION	QTY	REMARKS
1.	201	CABLE, PLENUM RATED, 25 PR	16FT	PLUS A/R
2.	8453	CONNECTOR, PLUG, 50 CONTACTS	A/R	
3.	8454	CONN, RECEPTACLE, 50 CONTACTS	32EA	PLUS A/R
4.	8455	BACKSHELL	A/R	NOTE 12
5.	8458	BAIL LOCK HARDWARE	32EA	
6.	827	MS3126F16-26S, CONN. W/B/S	1EA	
7.	809	BELDEN 88761	A/R	
8.	35	MS3116F8-4S	7EA	
9.	361	BNC CONNECTOR	7EA	
10.	40	SCREW, 4-40X3/8"	64EA	
11.	94	HEX NUT, 10-32	16EA	
12.	27	SCREW, 10-32X1/2"	16EA	
13.	70	FLAT WASHER #10	16EA	
14.	103	LOCK WASHER #10	12EA	
15.	550	MS3116F8-4SW, CONNECTOR	1EA	
16.	564	KPT06F8-4P	2EA	
17.	686	PAINT, BLUE #15080	1PT	
18.	6914	PRIMER	1PT	
19.	7480	COVER, BLIND END	1EA	
20.	7658	DUCT, 12", W/COVER	1EA	
21.	7489	FLANGE, 12"	1EA	
22.	842	BELDEN 88723	A/R	
23.	7019	HEX BOLT	2EA	
24.	95	4-40 HEX NUT	64EA	
25.	8229	LOCK WASHER #4	64EA	
26.	7404	5/16 HEX NUT	2EA	
27.	7407	5/16 LOCK WASHER	4EA	
28.	663	BACKSHELL	A/R	
29.	683	PAINT, WHITE	A/R	
30.	836	LABELS	A/R	
31.	838	CLEAR LACQUER	A/R	
32.	132	TY-RAP	A/R	
33.	3042	MOUNTING ANGLE	1PR	
34.	729	BACKSHELL	1EA	

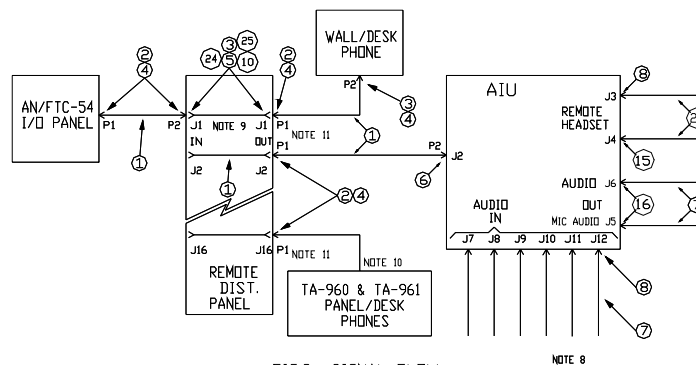


FIG.9 SIGNAL FLOW

## NOTES:

- ALL UNUSED WIRES WILL BE CLIPPED. CONNECT OVERALL SHIELD DRAIN WIRE TO P2 PIN 5.
- P2 BACKSHELL AND P1 PIN 25. ALL WIRES CONNECTED AT P1 END.
- GRY WIRE USED IS PART OF WHT/GRY PAIR.
- LT GRN WIRE USED IS PART OF RED/LT GRN PAIR.
- LT BLU WIRE USED IS PART OF BLK/LT BLU PAIR.
- PUR WIRE USED IS PART OF PUR/GRY PAIR.
- SHIELD IS CONNECTED TO EQUIPMENT TERMINAL BOARDS IF USED.
- CONNECT SHIELD TO BACKSHELL AND GROUND AT OPPOSITE END.
- CONNECTORS AT J7 THRU J12, IN AND OUT, ARE IDENTICAL.
- CONNECTORS AT J1 THRU J16, IN AND OUT, ARE IDENTICAL.
- SEE 99-08-061 FOR TA-960 PHONE CONNECTIONS.
- CONNECTIONS CAN BE MADE DIRECTLY TO THE AN/FTC-54.
- ATTACH BACKSHELL SO CABLE EXITS FROM PIN 1 END OF CONNECTION. USE MSC420-6A RUBBER BUSHING (NSN 5365-01-828-8526) OR EQUIVALENT IF REQUIRED FOR CLAMPING.

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

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D. Fackrell  
APPROVED  
D. Duff  
DRAWING CONTROL # 345



TITLE  
Audio/Intercom  
Interface (AIU) Cable  
Fabrication and Signal Flow  
SIZE C DATE ESTABLISHED 01 JUN 88 DRAWING NUMBER 99-08-345  
SCALE Full DATE 8 JAN 97 SHEET 3 OF 6

NOTES 2,3,4

UPDATE FIG NUMBERS

8 JAN 97 TMH

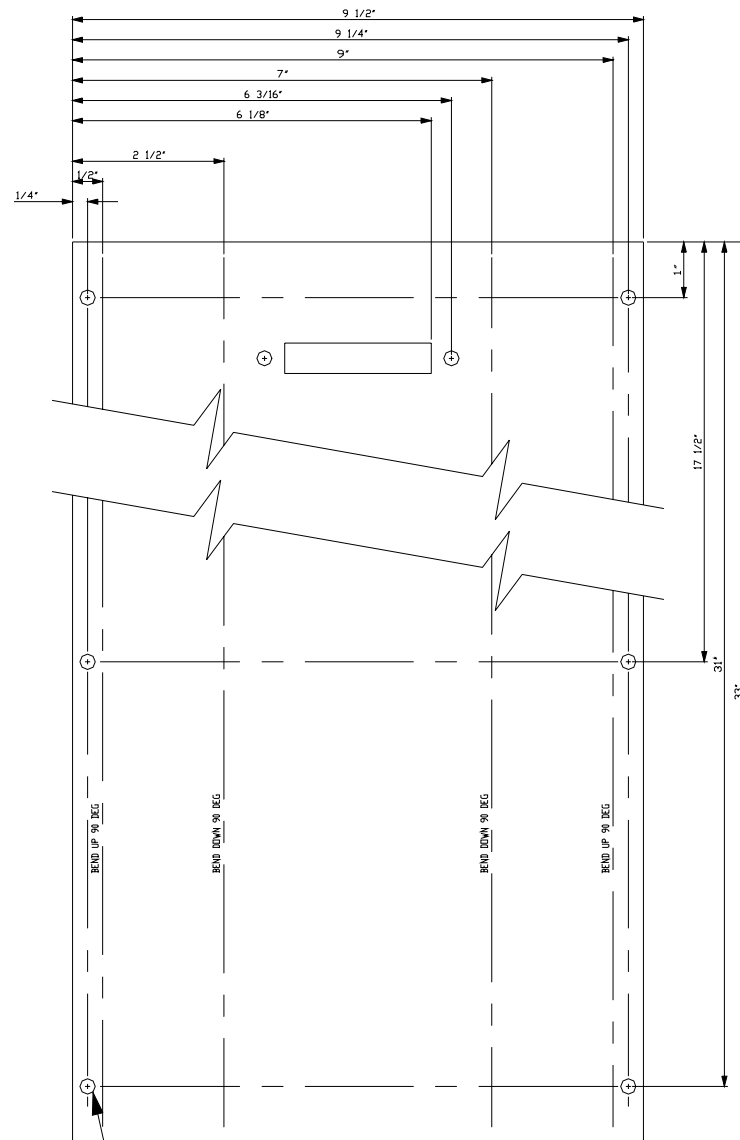
5/16" DIA HOLE  
6 PLACES

FIG.10 PANEL BENDING AND DRILLING DETAILS

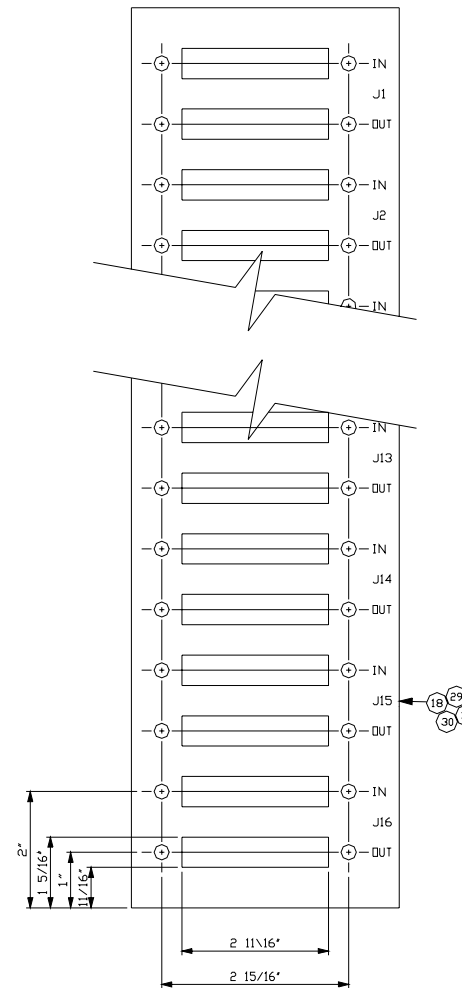


FIG.11 HOLE PENETRATION DETAILS

- NOTES: \* ALL DIMENSIONS ARE IN INCHES,  $\pm 1/32$ ".
1. MOUNT CONNECTORS WITH 4-40 X 3/8" SCREWS (LI 40), 4-40 HEX NUT (LI 95), AND LOCK WASHER #4 (LI B229).
  2. SHEET METAL THICKNESS SHALL BE 1/8 INCH AND ALUMINUM DODGED TREATED.
  3. PAINT REMOTE DIST. PANEL WITH PRIMER (LI 6914) AND WHITE PAINT (LI 683). LABEL WITH (LI 836) DAKTAK LABELS. PUT CLEAR LACQUER COATING (LI 838) ON FOR LABEL PROTECTION.
  4. REVERSE MOUNT OUTPUT RECEPTACLES WITH RESPECT TO INPUT RECEPTACLES.
  5. SEE SHEET 3 FOR RML.

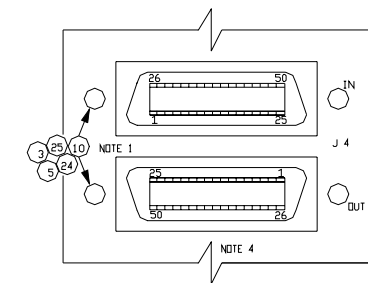
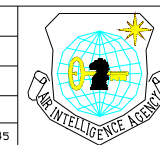


FIG.12 RECEPTACLE POSITION DETAIL

# U.S. AIR FORCE AIR INTELLIGENCE AGENCY

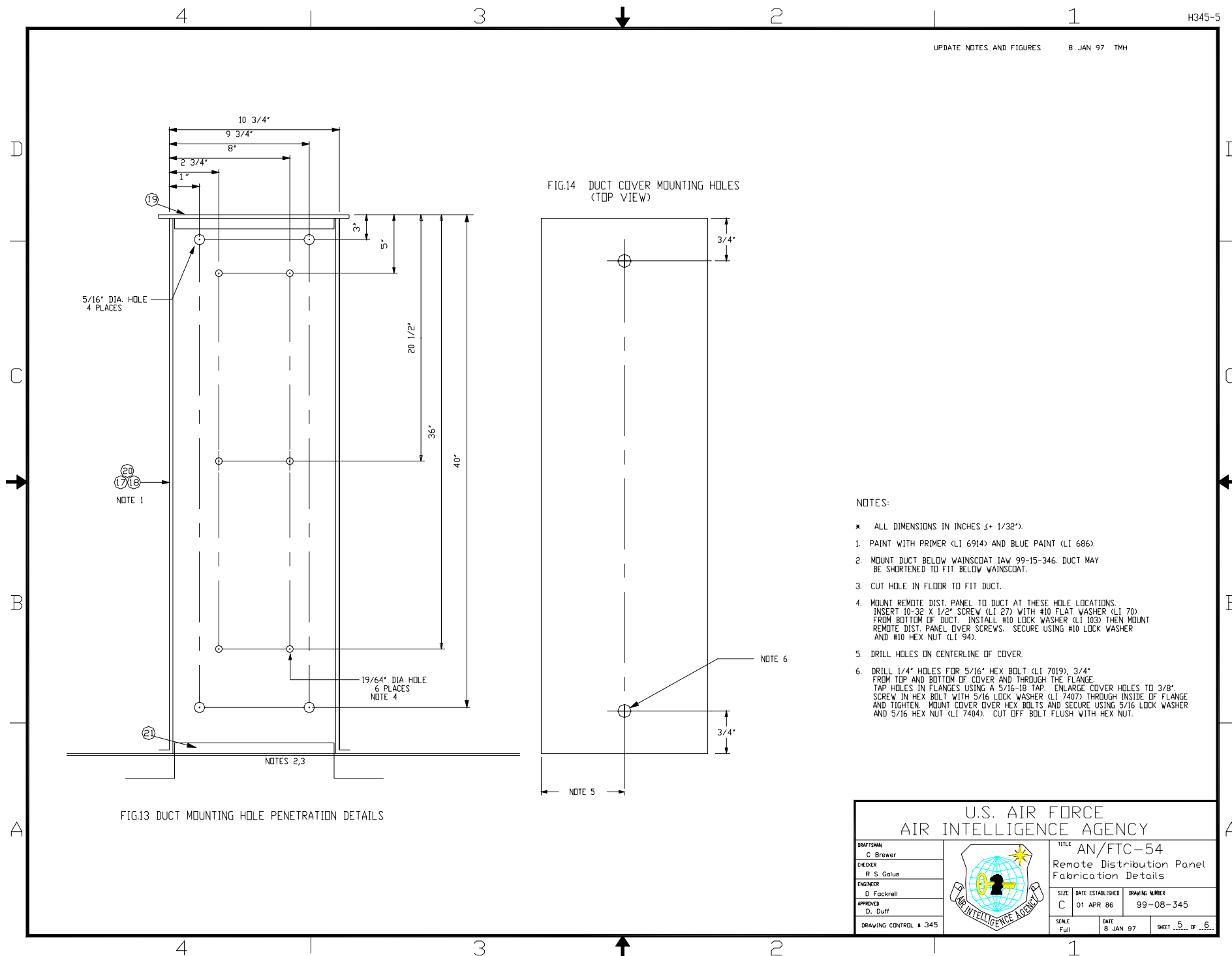
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ENGINEER  
R. S. Galus  
APPROVED  
D. Duff  
DRAWING CONTROL # 345



TITLE  
AN/FTC-54 Remote  
Distribution Panel  
Fabrication Details  
SIZE  
C  
DATE ESTABLISHED  
01 APR 86  
DRAWING NUMBER  
99-08-345  
SCALE  
Full  
DATE  
8 JAN 97  
SHEET 4 OF 6

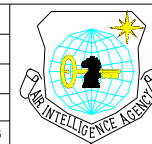
H345-5

UPDATE NOTES AND FIGURES 8 JAN 97 TMH



# U.S. AIR FORCE AIR INTELLIGENCE AGENCY

DRAFTSMAN	C Brewer
CHECKER	R S Galus
ENGINEER	D Fackrell
APPROVED	D. Duff
DRAWING CONTROL #	345



TITLE AN/FTC-54 Remote Distribution Panel Fabrication Details		
SIZE C	DATE ESTABLISHED 01 APR 86	DRAWING NUMBER 99-08-345
SCALE Full	DATE 8 JAN 97	SHEET 5 OF 6

PORTS  
EQUIPMENT #  
REAR JACK # (I/O ASSY)

TABLE A  
NOTE 1  
PABX LINE CARDS  
TOP BUCKET

1.	161 J33	169 J37	177 J41	185 J45	193 J49	201 J53	209 J17	217 J21	225 J25	233 J29	241 J33	249 J37
2.	162 J34	170 J38	178 J42	186 J46	194 J50	202 J54	210 J18	218 J22	226 J26	234 J30	242 J34	250 J38
3.	163 J35	171 J39	179 J43	187 J47	195 J51	203 J55	211 J19	219 J23	227 J27	235 J31	243 J35	251 J39
4.	164 J36	172 J40	180 J44	188 J48	196 J52	204 J56	212 J20	220 J24	228 J28	236 J32	244 J36	252 J40
5.	165 J57	173 J61	181 J1	189 J5	197 J9	205 J13	213 J41	221 J45	229 J49	237 J53	245 CG1	253 CG5
6.	166 J58	174 J62	182 J2	190 J6	198 J10	206 J14	214 J42	222 J46	230 J50	238 J54	246 CG2	254 CG6
7.	167 J59	175 J63	183 J3	191 J7	199 J11	207 J15	215 J43	223 J47	231 J51	239 J55	247 CG3	255 CG7
8.	168 J60	176 J64	184 J4	192 J8	200 J12	208 J16	216 J44	224 J48	232 J52	240 J56	248 CG4	256 CG8

CONFERENCE GROUPS

DICOM

BOTTOM BUCKET

1.	001 J1	009 J5	017 J9	025 J13	033 J17	041 J21	049 J49	057 J53	065 J57	073 J61	081 J1	089 J5	097 J57
2.	002 J2	010 J6	018 J10	026 J14	034 J18	042 J22	050 J50	058 J54	066 J58	074 J62	082 J2	090 J6	098 J58
3.	003 J3	011 J7	019 J11	027 J15	035 J19	043 J23	051 J51	059 J55	067 J59	075 J63	083 J3	091 J7	099 J59
4.	004 J4	012 J8	020 J12	028 J16	036 J20	044 J24	052 J52	060 J56	068 J60	076 J64	084 J4	092 J8	100 J60
5.	005 J25	013 J29	021 J33	029 J37	037 J41	045 J45	053 J9	061 J13	069 J17	077 J21	085 J25	093 J29	101 J61
6.	006 J26	014 J30	022 J34	030 J38	038 J42	046 J46	054 J10	062 J14	070 J18	078 J22	086 J26	094 J30	102 J62
7.	007 J27	015 J31	023 J35	031 J39	039 J43	047 J47	055 J11	063 J15	071 J19	079 J23	087 J27	095 J31	103 J63
8.	008 J28	016 J32	024 J36	032 J40	040 J44	048 J48	056 J12	064 J16	072 J20	080 J24	088 J28	096 J32	104 J64

TABLE B  
NOTE 2  
I/O ASSY JACKS (REAR VIEW)

A 4	1-1 (J1)	1-2 (J2)	1-3 (J3)	1-4 (J4)	2-1 (J5)	2-2 (J6)	2-3 (J7)	2-4 (J8)	3-1 (J9)	3-2 (J10)	3-3 (J11)	3-4 (J12)	4-1 (J13)	4-2 (J14)	4-3 (J15)	4-4 (J16)	BOTTOM BUCKET
	5-1 (J17)	5-2 (J18)	5-3 (J19)	5-4 (J20)	6-1 (J21)	6-2 (J22)	6-3 (J23)	6-4 (J24)	1-5 (J25)	1-6 (J26)	1-7 (J27)	1-8 (J28)	2-5 (J29)	2-6 (J30)	2-7 (J31)	2-8 (J32)	
	3-5 (J33)	3-6 (J34)	3-7 (J35)	3-8 (J36)	4-5 (J37)	4-6 (J38)	4-7 (J39)	4-8 (J40)	5-5 (J41)	5-6 (J42)	5-7 (J43)	5-8 (J44)	6-5 (J45)	6-6 (J46)	6-7 (J47)	6-8 (J48)	
	7-1 (J49)	7-2 (J50)	7-3 (J51)	7-4 (J52)	8-1 (J53)	8-2 (J54)	8-3 (J55)	8-4 (J56)	9-1 (J57)	9-2 (J58)	9-3 (J59)	9-4 (J60)	10-1 (J61)	10-2 (J62)	10-3 (J63)	10-4 (J64)	
A 5	11-1 (J1)	11-2 (J2)	11-3 (J3)	11-4 (J4)	12-1 (J5)	12-2 (J6)	12-3 (J7)	12-4 (J8)	7-5 (J9)	7-6 (J10)	7-7 (J11)	7-8 (J12)	8-5 (J13)	8-6 (J14)	8-7 (J15)	8-8 (J16)	TOP BUCKET
	9-5 (J17)	9-6 (J18)	9-7 (J19)	9-8 (J20)	10-5 (J21)	10-6 (J22)	10-7 (J23)	10-8 (J24)	11-5 (J25)	11-6 (J26)	11-7 (J27)	11-8 (J28)	12-5 (J29)	12-6 (J30)	12-7 (J31)	12-8 (J32)	
	1-1 (J33)	1-2 (J34)	1-3 (J35)	1-4 (J36)	2-1 (J37)	2-2 (J38)	2-3 (J39)	2-4 (J40)	3-1 (J41)	3-2 (J42)	3-3 (J43)	3-4 (J44)	4-1 (J45)	4-2 (J46)	4-3 (J47)	4-4 (J48)	
	5-1 (J49)	5-2 (J50)	5-3 (J51)	5-4 (J52)	6-1 (J53)	6-2 (J54)	6-3 (J55)	6-4 (J56)	1-5 (J57)	1-6 (J58)	1-7 (J59)	1-8 (J60)	2-5 (J61)	2-6 (J62)	2-7 (J63)	2-8 (J64)	
A 6	3-5 (J1)	3-6 (J2)	3-7 (J3)	3-8 (J4)	4-5 (J5)	4-6 (J6)	4-7 (J7)	4-8 (J8)	5-5 (J9)	5-6 (J10)	5-7 (J11)	5-8 (J12)	6-5 (J13)	6-6 (J14)	6-7 (J15)	6-8 (J16)	BOTTOM BUCKET
	7-1 (J17)	7-2 (J18)	7-3 (J19)	7-4 (J20)	8-1 (J21)	8-2 (J22)	8-3 (J23)	8-4 (J24)	9-1 (J25)	9-2 (J26)	9-3 (J27)	9-4 (J28)	10-1 (J29)	10-2 (J30)	10-3 (J31)	10-4 (J32)	
	11-1 (J33)	11-2 (J34)	11-3 (J35)	11-4 (J36)	12-1 (J37)	12-2 (J38)	12-3 (J39)	12-4 (J40)	7-5 (J41)	7-6 (J42)	7-7 (J43)	7-8 (J44)	8-5 (J45)	8-6 (J46)	8-7 (J47)	8-8 (J48)	
	9-5 (J49)	9-6 (J50)	9-7 (J51)	9-8 (J52)	10-5 (J53)	10-6 (J54)	10-7 (J55)	10-8 (J56)	13-1 (J57)	13-2 (J58)	13-3 (J59)	13-4 (J60)	13-5 (J61)	13-6 (J62)	13-7 (J63)	13-8 (J64)	
TOP BUCKET																	BOTTOM BUCKET
A 7																	
	SPARES NOTE 4																
TRUNK JACK																	

TABLE C  
NOTE 3

1 THRU 13 ARE CARD SLOTS

J1 THRU J59 ARE I/O RACK CONNECTORS

CONFERENCE GROUP

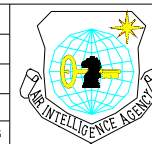
1	2	3	4	5	6	7	8	9	10	11	12	13
J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13
J14	J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26
J27	J28	J29	J30	J31	J32	J33	J34	J35	J36	J37	J38	J39
J40	J41	J42	J43	J44	J45	J46	J47	J48	J49	J50	J51	J52
J53	J54	J55	J56	J57	J58	J59	J60	J61	J62	J63	J64	J1
J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14
J15	J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27
J28	J29	J30	J31	J32	J33	J34	J35	J36	J37	J38	J39	J40
J41	J42	J43	J44	J45	J46	J47	J48	J49	J50	J51	J52	J53
J54	J55	J56	J57	J58	J59	J60	J61	J62	J63	J64	J1	J2
J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14	J15
J16	J17	J18	J19	J20	J21	J22	J23	J24	J25	J26	J27	J28
J29	J30	J31	J32	J33	J34	J35	J36	J37	J38	J39	J40	J41
J42	J43	J44	J45	J46	J47	J48	J49	J50	J51	J52	J53	J54
J55	J56	J57	J58	J59	J60	J61	J62	J63	J64			
S P A R E S												
CG1	CG2	CG3	CG4	CG5	CG6	CG7	CG8					
CG1	CG2	CG3	CG4	CG5	CG6	CG7	CG8					

#### NOTES:

- TABLE A TRACES THE EQUIPMENT NUMBER, MITEL LINE CARD, AND LINE CARD PORT TO THE ASSOCIATED CONNECTOR AT THE REAR OF THE I/O RACK.
- TABLE B TRACES THE CONNECTOR AT THE REAR OF THE I/O RACK TO ITS ASSOCIATED MITEL LINE CARD, PORT, AND EQUIPMENT NUMBER.
- TABLE C SHOWS THE CORRELATION OF EACH 4000F LINE CARD TO ITS ASSOCIATED I/O RACK CONNECTOR.
- WIRED TO 4000F LINE CARDS ONLY.

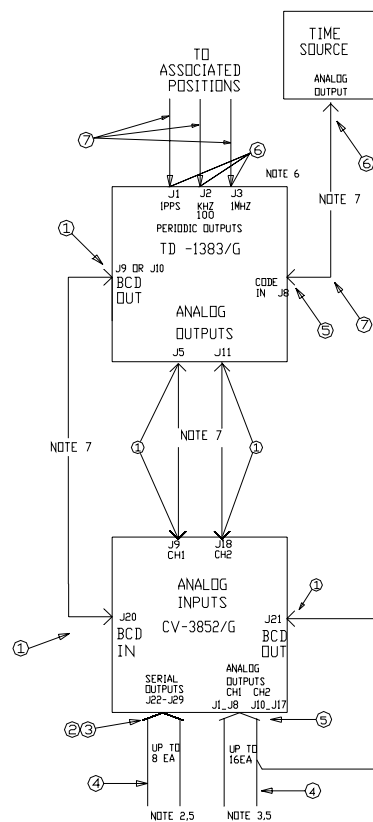
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R S Galus  
ENGINEER  
D L Fackrell  
APPROVED  
D. Duff  
DRAWING CONTROL # 345



TITLE  
AN/FTC-54 I/O  
Assy Jacks-to-PABX Line  
Cards Correlation Tables  
SIZE  
C  
DATE ESTABLISHED  
01 APR 86  
DRAWING NUMBER  
99-08-345  
SCALE  
Full  
DATE  
15 MAR 94  
SHEET  
6 OF 6



FIG. 1  
AN/GSQ-216 BLOCK DIAGRAM

## REQUIRED MATERIAL LISTING

FIND #	RML LT	DESCRIPTION	QTY	REMARKS
1				NOTE 1
2	181	CONN MS27467113F35S	8EA	MAX PER CV-3852
3	6412	B/S M3899976-12B05	8EA	MAX PER CV-3852
4	195	BELDEN 83553	A/R	PLUS AS READ
5	35	CONN MS316F8-4S	1EA	PLUS AS READ
6	361	BNC CONN	1EA	PLUS AS READ
7	809	BELDEN 88761	A/R	

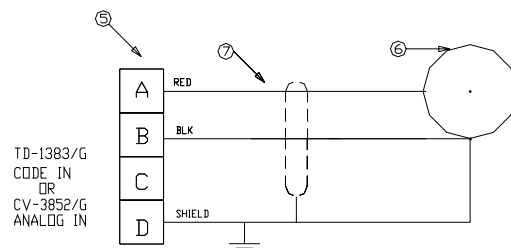


FIG. 2 NOTE 4

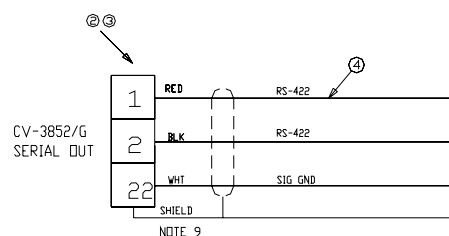
RS-422 OR RS-232  
SWITCHABLE FROM FRONT PANEL

FIG. 3 NOTE 5

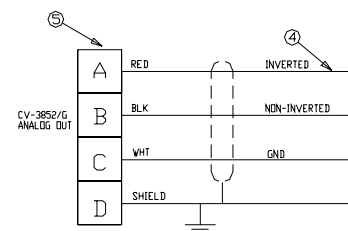


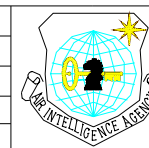
FIG. 4 NOTE 5,8

## NOTES:

- CABLE AND CONNECTORS SUPPLIED WITH EQUIPMENT.
- J22 THRU J29 (8EA) ARE SERIAL DIGITAL ASCII TIME CODE OUTPUTS.
- J1 THRU J8, CH1, AND J10 THRU J17, CH2, (16 TOTAL) ARE SERIAL ANALOG TIME CODE OUTPUTS.
- IF FURTHER DETAILS ARE REQUIRED SEE MB 23-33 (4).
- IF FURTHER DETAILS ARE REQUIRED SEE MB 23-33 (5).
- SEE FIG 2 FOR PINNING DETAILS OF BNC CONNECTORS AT J1 THRU J3.
- WHEN TD-1383/G IS NOT PART OF THE SYSTEM, TIME SOURCE INPUTS ARE CONNECTED DIRECTLY TO CV-3852/G USING BCD CABLE, FIGURE 5, AND TWO TIME CODE CABLES FOR ANALOG INPUTS, FIGURE 2.
- EACH OF THE 16 OUTPUTS USES AN INVERTING AMP AND A NON-INVERTING AMP TO PRODUCE A BALANCED PAIR OF ANALOG TIME CODE SIGNALS. OUTPUT IMPEDANCE IS 600 OHMS BALANCED TO SIGNAL GROUND.
- CONNECT SHIELD TO BACKSHELL AT BOTH ENDS.

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D. L. Fackrell  
APPROVED  
D. Duff  
DRAWING CONTROL # 011



TITLE  
AN/GSQ-216  
I/O Cable  
Fabrication Details  
SIZE  
C  
DATE ESTABLISHED  
31 JUL 87  
DRAWING NUMBER  
99-09-011  
SCALE  
Full  
DATE  
08 APR 92  
SHEET 1 OF 2

CORRECTED FIND NO. 2 & 3  
ADDED J1 NOS TO CV-3852/G  
AND TD-1383/G  
ADDED SHEET 2 AND NOTE 7  
CHANGED SERIAL & ANALOG  
OUTPUTS, FIGS 3 & 4.  
ADDED NOTE 8  
CHANGED FIND NO. 7  
CHANGED FIG 2,3 AND 4,  
ADDED NOTE 9.

1MAR88 DLF  
1SEP88 RSG  
30SEP88 DEB  
31MAY90 CS  
8APR92 CCS

TIME SOURCE I/O PANEL  
ANALOG OUT

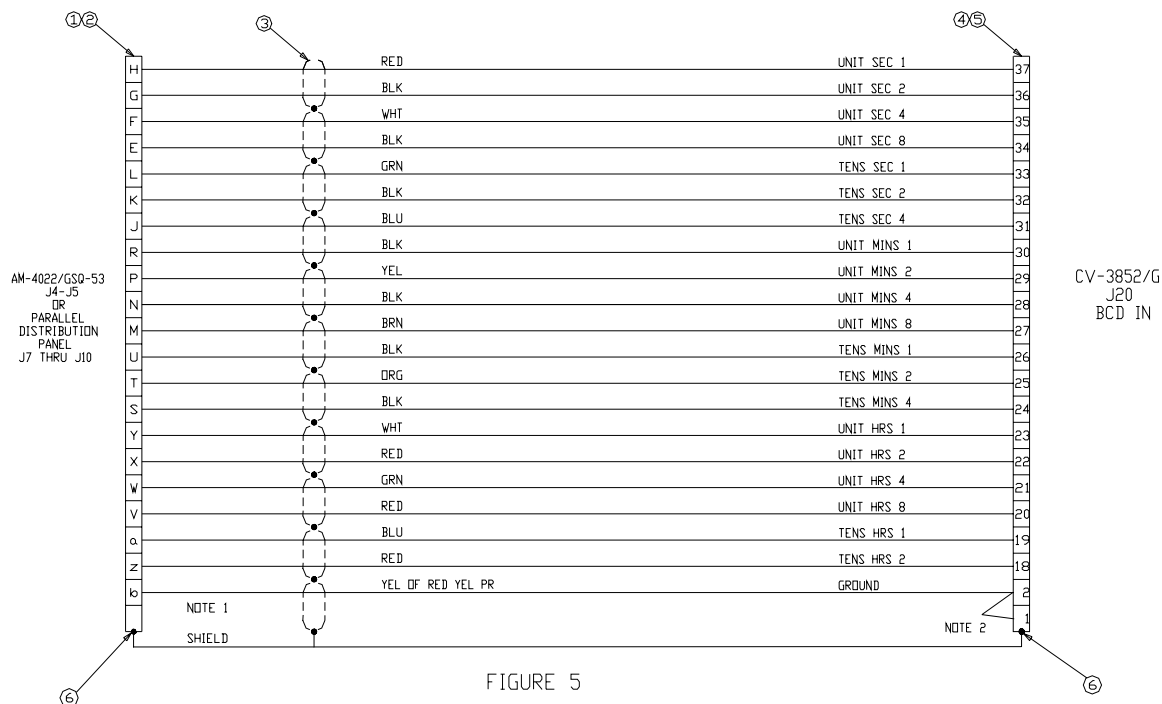
CHANGED NOTE 1 FIG 5, FIND 3. BAPR92 CCS  
ADDED FIND NO. 6

FIGURE 5

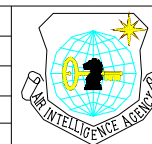
- NOTES
1. CONNECT SHIELD AND ALL UN-USED WIRES TO BACKSHELL AT BOTH ENDS OF CABLE. USE TERMINAL LUG (LI-1324).
  2. JUMPER IS BLACK WIRE (LI-612) OR EXCESS WIRE FROM CABLE.

## REQUIRED MATERIAL LISTING

FIND #	RML LI	DESCRIPTION	QTY	REMARKS
1	5028	CONN. MS3456L28-12P	1 EACH	
2	759	BACKSHELL, MS3417-28C	1 EACH	
3	531	CABLE, 12P2217CPSP	A/R	
4	555	CONN. MS2746711SF 37S	1 EACH	
5	556	BACKSHELL MS5049/49-2-14A	1 EACH	
6	1324	TERMINAL LUG	2 EACH	

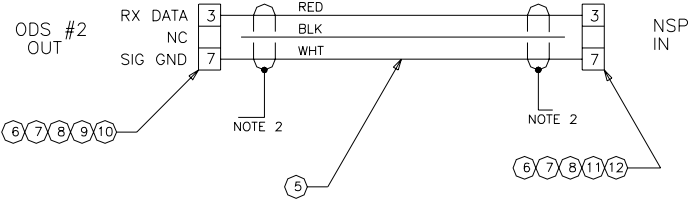
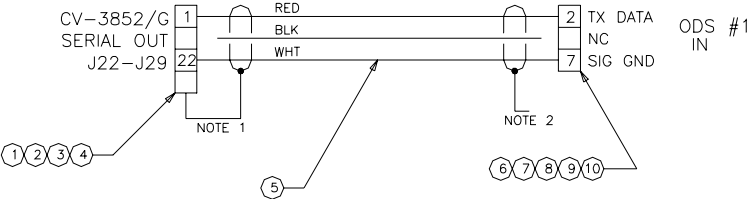
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AIR INTELLIGENCE AGENCY

DRAFTSMAN C. Brewer
CHECKER R. S. Galus
ENGINEER D. E. Boone
APPROVED D. Duff
DRAWING CONTROL # 011



TITLE AN/GSQ-216 BCD Cable Fabrication Details		
SIZE C	DATE ESTABLISHED 30 SEP 88	DRAWING NUMBER 99-09-011

SCALE Full	DATE 08 APR 92	SHEET 2 OF 2
---------------	-------------------	-----------------



- NOTES:
- 1. SHIELD AND UNUSED WIRE ARE CONNECTED TO BACKSHELL CABLE CLAMP FOR GROUNDING.
  - 2. CRIMP SHIELD AND UNUSED WIRE BETWEEN FERRULES USING CRIMPER DIE ASSEMBLY P/N 543013-3 (DIE MARKC1)

REQUIRED MATERIALS LIST			
FIND	LI NO	DESCRIPTION	QTY
1.	181	CONN,MS27467T13F35S	1
2.	6412	B/S M38999/6-12B05	1
3.	612	WIRE, 22 AWG	A/R
4.	1324	TERMINAL LUG	1
5.	195	BELDEN, 83553	A/R
6.	978	INNER FERRULE	3
7.	979	OUTER FERRULE	3
8.	6865	RFI BACKSHELL	3
9.	830	CONN,DB25P	2
10.	6874	PIN CONTACTS	4
11.	833	CONN,DB25S	1
12.	6875	SOCKET CONTACTS	2

U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN C.C. Brewer		TITLE AN/GSQ-216 TO NSP THROUGH ODS-318	
CHECKER C. Smith		SIZE C	
ENGINEER T.E. Moorman		DATE ESTABLISHED 20 JAN 93	
APPROVED T.E. Moorman		DRAWING NUMBER 99-09-023	
DRAWING CONTROL # 023		SCALE Full	SHEET 1 OF 1

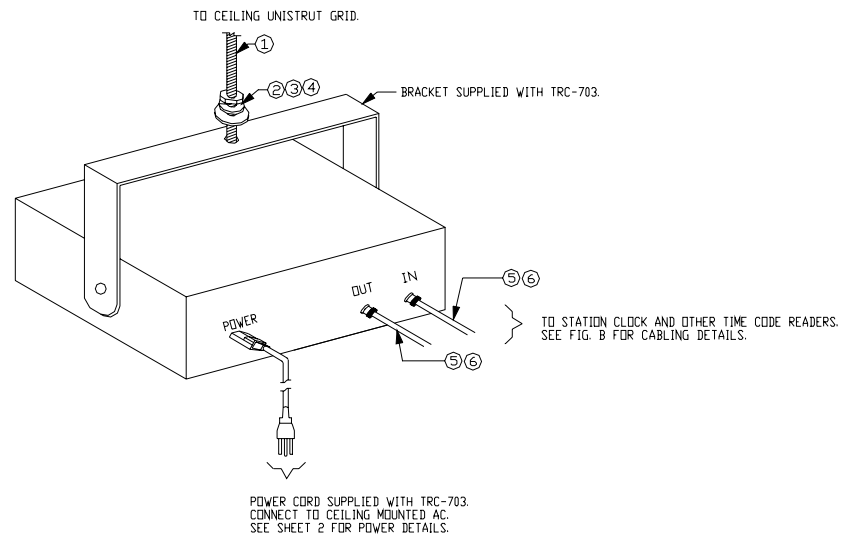


FIG. A

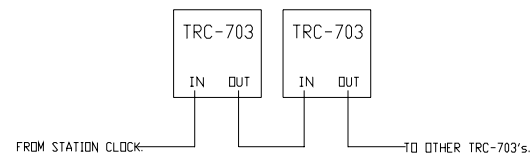


FIG. B

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	0650	ROD, THREADED, 3/8-16 X 120 INCHES LONG	001 EA
2.	0998	WASHER, LOCK, 3/8 INCH STEEL	002 EA
3.	0086	WASHER, FLAT, 3/8 INCH HOLE, FOR 3/8 HANGER ROD	002 EA
4.	0105	NUT, HEX, STEEL, (U/F 3/8 INCH RODS/BOLTS)	0.02 HD
5.	0383	CABLE, RF, RG-223/U, 50 OHM	AS REQ.
6.	0394	CONNECTOR, BNC MALE, CRIMP TYPE FOR RG-223	002 EA

USED ON BOTTOM AND TOP OF BRACKET.

PER TRC-703.

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

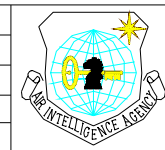
DRAFTSMAN  
D. D. Griffith

CHECKER  
C. Smith

ENGINEER  
D. D. Griffith

APPROVED  
D. Duff

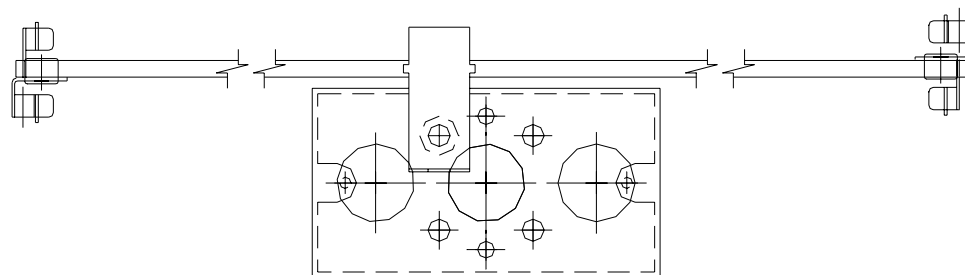
DRAWING CONTROL # 030



TITLE  
TRC-703 Time  
Code Reader Ceiling  
Installation Details

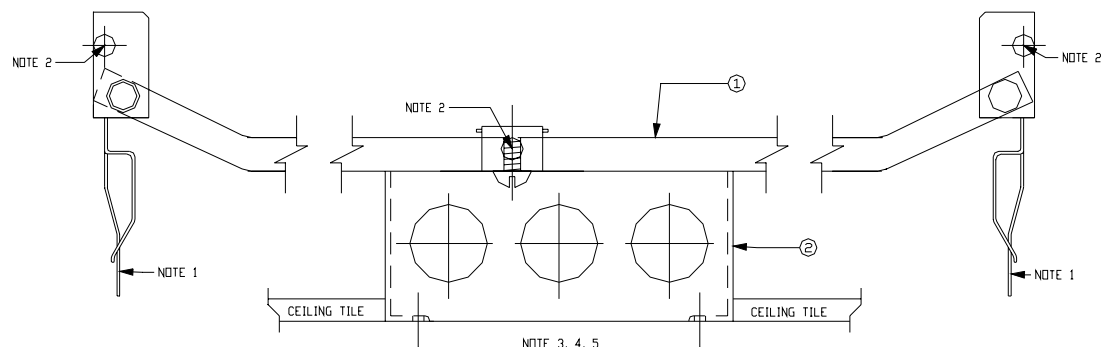
SIZE C	DATE ESTABLISHED 15 APR 91	DRAWING NUMBER 99-09-030
SCALE Full	DATE 15 APR 91	SHEET 1 OF 2

1030-2



TOP VIEW

- NOTES:
1. CLIP THIS TO CEILING TILE SUPPORTS.
  2. RUN WIRE (LI 901) THRU THESE HOLES AND CONNECT TO EXISTING WIRE SUPPORTS.
  3. SEE 99-16-266 FOR WIRING.
  4. MFS WILL DETERMINE HARDWARE AND ROUTING FROM JUNCTION BOX.
  5. CUT CEILING TILE TO EXPOSE POWER BOX. USE BOX AS TEMPLATE.
  6. LI 266 USED IN LIEU OF LI 497.



FRONT VIEW

## REQUIRED MATERIALS LIST

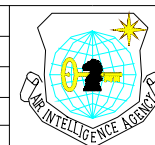
FIND	LI NO	DESCRIPTION	QTY
1.	0161	T-BAR HANGER, ELECTRICAL BOX W/MTNG CLIP AND SCRW	001 EA
2.	0490	CONDUIT HARDWARE, JUNCTION BOX, 4L X 2 1/8 W	001 EA
3.	0310	DUPLEX OUTLET, 15 AMP, 125VAC, DUAL RECEPTACLE	001 EA
4.	0266	WALL PLATE FOR SINGLE DUPLEX AC OUTLET, IVORY	001 EA
5.	0868	WIRE, 12 AWG, GREEN, SOLID	AS REQ.
6.	0876	WIRE, 12 AWG, BLACK, SOLID	AS REQ.
7.	0877	WIRE, 12 AWG, WHITE, SOLID	AS REQ.
8.	0901	16 GAUGE CONSTRUCTION WIRE	AS REQ.

NOT SHOWN. SEE 99-16-266.  
NOTE 6

NOT SHOWN.

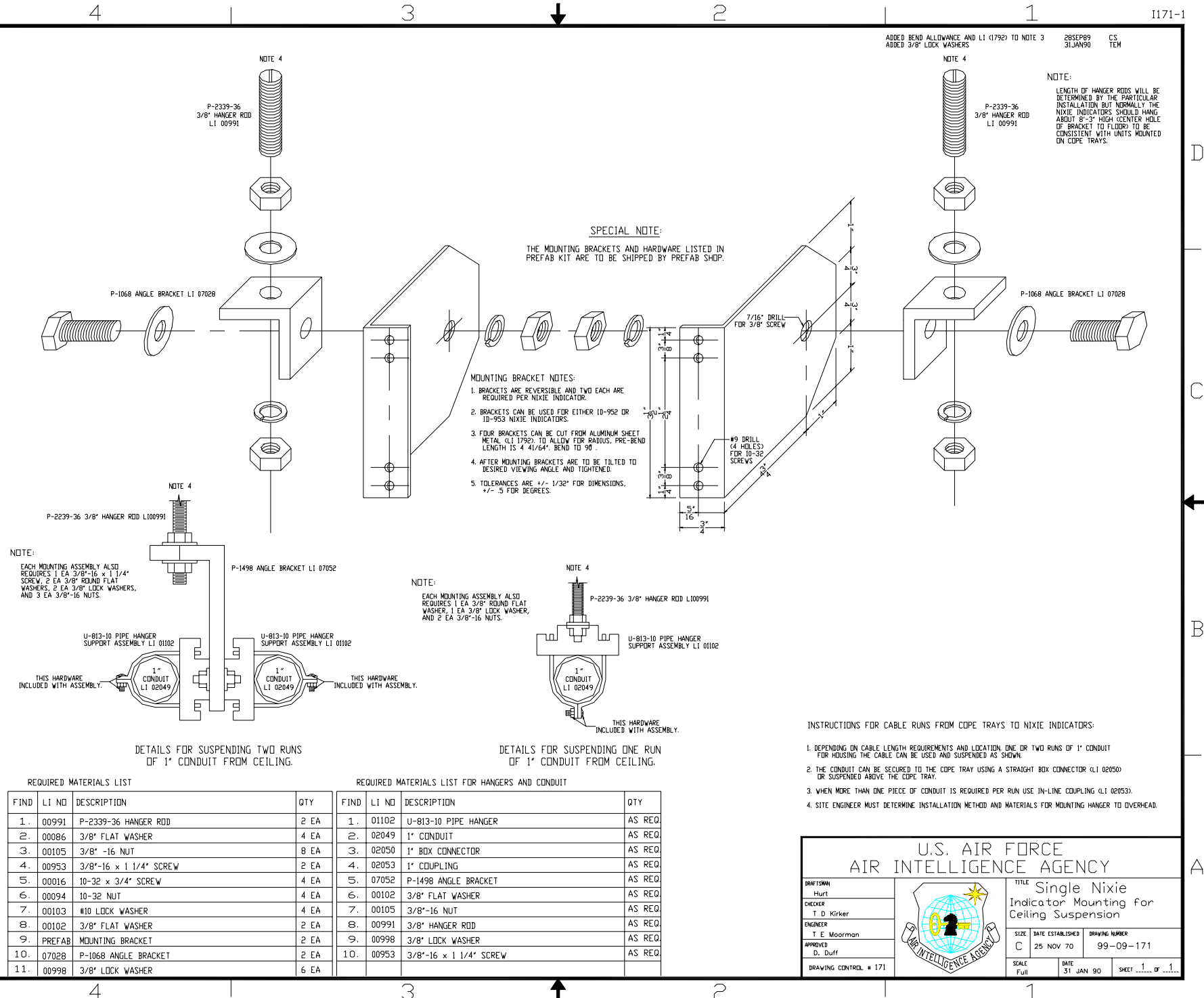
U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
D. D. Griffith  
CHECKER  
C. Smith  
ENGINEER  
D. D. Griffith  
APPROVED  
D. Duff  
DRAWING CONTROL # 030



TITLE  
TRC-703 Time  
Code Reader Ceiling  
Power Installation

SIZE  
C  
DATE ESTABLISHED  
15 APR 91  
DRAWING NUMBER  
99-09-030  
SCALE  
Full  
DATE  
15 APR 91  
SHEET  
2 OF 2



4

3

2

1

1270-1

UPDATED DRAWING IN CABS.

26 MAR 93 PMS

57-60500  
L/I 00332  
NOTE 1(L/I 005026)  
NOTE 4  
CABLE 48 CONDUCTOR57-60500  
L/I 00332  
NOTE 1

1	WHT/BLU/BLK
2	WHT/BLU/BRN
3	WHT/BLU/RED
4	WHT/BLU/GR
5	WHT/BLU/YEL
6	WHT/BLU/GRN
7	WHT/VIL/BLK
8	WHT/VIL/BRN
9	WHT/VIL/RED
10	WHT/VIL/GR
11	WHT/BRN/RED
12	WHT/BRN/GR
13	WHT/BRN/YEL
14	WHT/BRN/GRN
15	WHT/YEL/BLK
16	WHT/YEL/BRN
17	WHT/YEL/RED
18	WHT/YEL/GR
19	WHT/YEL/BLU
20	WHT
21	WHT/BLK
22	WHT/BRN
23	WHT/RED
24	WHT/GR
25	WHT/YEL
26	WHT/GRN
27	WHT/BLU
28	WHT/VIL
29	WHT/GR
30	WHT/BLK/BRN
31	WHT/BLK/RED
32	WHT/RED/BLK
33	WHT/RED/BRN
34	WHT/RED/YEL
35	WHT/RED/GRN
36	WHT/RED/BLU
37	WHT/GRN/BLK
38	WHT/GRN/BRN
39	WHT/GRN/RED
40	WHT/GRN/GR
41	WHT/GRN/BLU
42	WHT/GR/BLK
43	WHT/GR/BRN
44	WHT/GR/RED
45	WHT/GR/GRN
46	WHT/GR/BLU
47	
48	
49	
50	WHT/GR/BLU

NOTE 3

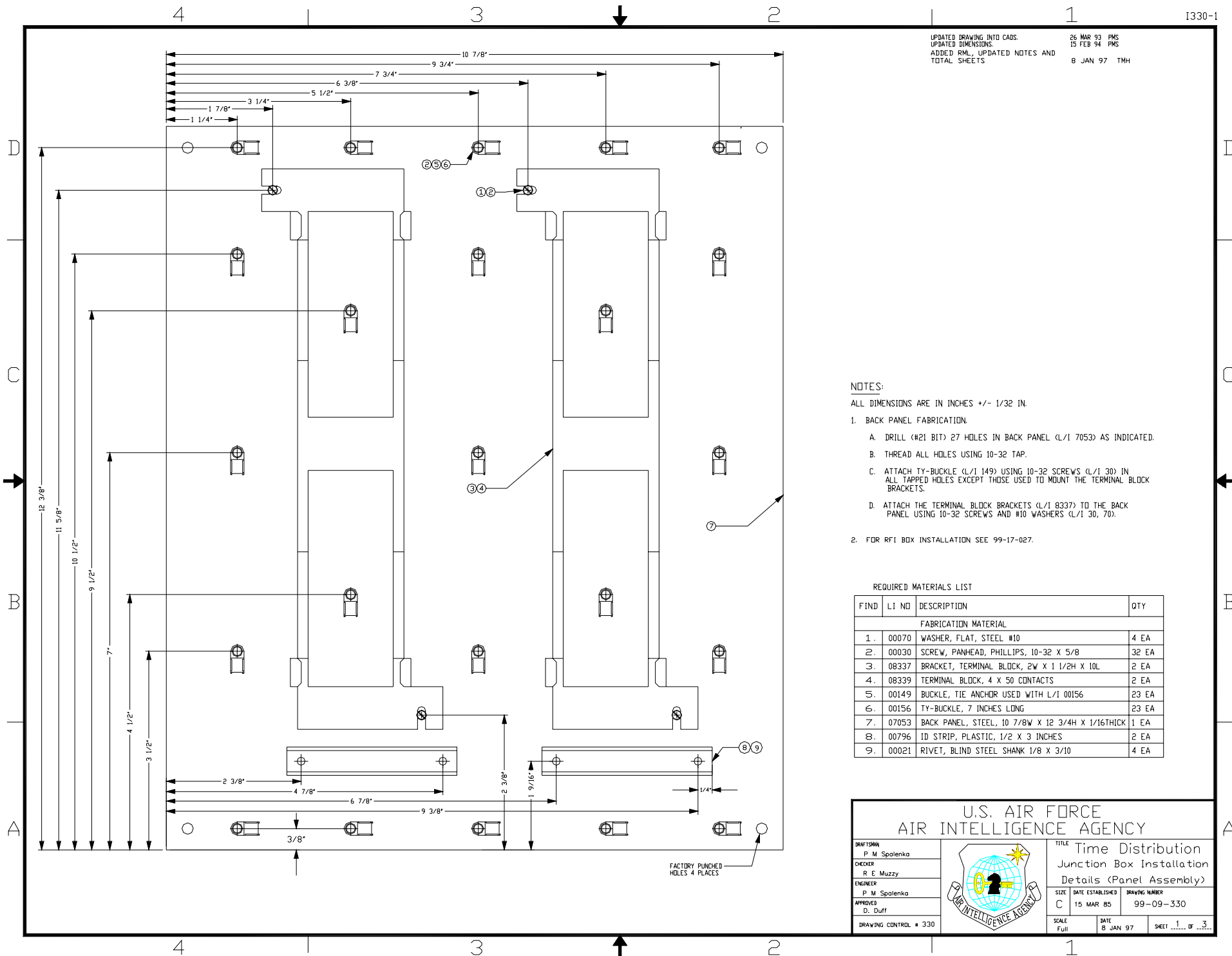
1	WHT/YEL/BLU
2	WHT/YEL/GRN
3	WHT/GR/GR
4	WHT/GR/VIL
5	WHT/GR/BLU
6	WHT/GR/GRN
7	WHT/GR/YEL
8	WHT/RED/GR
9	WHT/RED/VIL
10	WHT/RED/BLU
11	WHT/RED/GRN
12	WHT/RED/YEL
13	WHT/RED/GR
14	WHT/BRN/GR
15	WHT/BRN/VIL
16	WHT/BRN/BLU
17	WHT/BRN/GRN
18	WHT/BRN/YEL
19	WHT/BRN/GR
20	WHT/BRN/RED
21	WHT/BLK/GR
22	WHT/BLK/VIL
23	WHT/BLK/BLU
24	WHT/BLK/GRN
25	WHT/BLK/YEL
26	WHT/BLK/GR
27	WHT/BLK/RED
28	WHT/BLK/BRN
29	WHT/GR
30	WHT/VIL
31	WHT/BLU
32	WHT/GRN
33	WHT/YEL
34	WHT/GR
35	WHT/RED
36	WHT/BRN
37	WHT/BLK
38	WHT
39	GR
40	VIL
41	BLU
42	GRN
43	YEL
44	GR
45	RED
46	BRN
47	
48	
49	
50	BLK

NOTE 2

## NOTES:

1. THIS CONNECTOR MATES WITH L/I 00329 TO JUMPER OUT A NIXIE INDICATOR OR FOR AN IN-LINE SPLICE.
2. STANDARD COLOR CODE.
3. RCA CABLE COLOR CODES. THIS VIEW FOR COLOR CODE ONLY.
4. CABLE LENGTH AS SPECIFIED IN THE INSTALLATION SCHEME.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN P. M. Spalenko		TITLE Jumper Cable for Nixie Indicator and In-Line Splice	
CHECKER C. Smith		SIZE C	
ENGINEER P. M. Spalenko		DATE ESTABLISHED 01 APR 76	
APPROVED D. Duff		DRAWING NUMBER 99-09-270	
DRAWING CONTROL # 270		SCALE Full	
		DATE 26 MAR 93	
		SHEET 1 OF 1	



UPDATED DRAWING INTO CADS.  
 UPDATED DIMENSIONS.  
 ADDED RML, UPDATED NOTES AND  
 TOTAL SHEETS

26 MAR 93 PMS  
 15 FEB 94 PMS  
 8 JAN 97 TMH

## NOTES:

ALL DIMENSIONS ARE IN INCHES +/- 1/32 IN.

## 1. BACK PANEL FABRICATION.

- DRILL (#21 BIT) 27 HOLES IN BACK PANEL (L/I 7053) AS INDICATED.
- THREAD ALL HOLES USING 10-32 TAP.
- ATTACH TY-BUCKLE (L/I 149) USING 10-32 SCREWS (L/I 30) IN ALL TAPPED HOLES EXCEPT THOSE USED TO MOUNT THE TERMINAL BLOCK BRACKETS.
- ATTACH THE TERMINAL BLOCK BRACKETS (L/I 8337) TO THE BACK PANEL USING 10-32 SCREWS AND #10 WASHERS (L/I 30, 70).

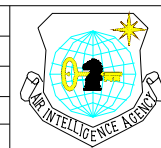
## 2. FOR RFI BOX INSTALLATION SEE 99-17-027.

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
FABRICATION MATERIAL			
1.	00070	WASHER, FLAT, STEEL #10	4 EA
2.	00030	SCREW, PANHEAD, PHILLIPS, 10-32 X 5/8	32 EA
3.	08337	BRACKET, TERMINAL BLOCK, 2W X 1 1/2H X 10L	2 EA
4.	08339	TERMINAL BLOCK, 4 X 50 CONTACTS	2 EA
5.	00149	BUCKLE, TIE ANCHOR USED WITH L/I 00156	23 EA
6.	00156	TY-BUCKLE, 7 INCHES LONG	23 EA
7.	07053	BACK PANEL, STEEL, 10 7/8W X 12 3/4H X 1/16THICK	1 EA
8.	00796	ID STRIP, PLASTIC, 1/2 X 3 INCHES	2 EA
9.	00021	RIVET, BLIND STEEL SHANK 1/8 X 3/10	4 EA

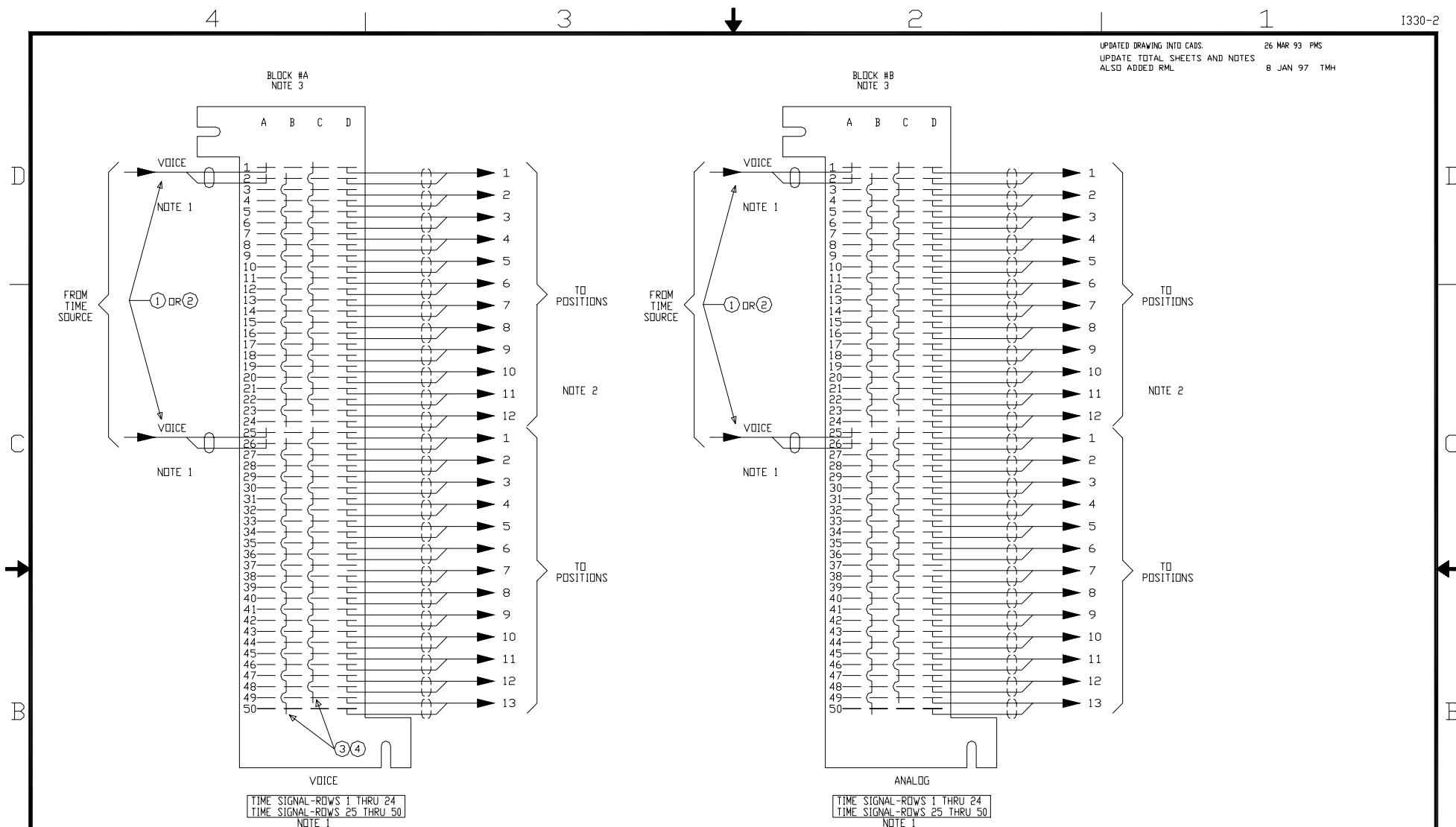
# U.S. AIR FORCE AIR INTELLIGENCE AGENCY

DRAFTSMAN  
 P. M. Spalenka  
 CHECKER  
 R. E. Muzzy  
 ENGINEER  
 P. M. Spalenka  
 APPROVER  
 D. Duff  
 DRAWING CONTROL # 330



TITLE  
 Time Distribution  
 Junction Box Installation  
 Details (Panel Assembly)  
 SIZE  
 C  
 DATE ESTABLISHED  
 15 MAR 85  
 DRAWING NUMBER  
 99-09-330  
 SCALE  
 Full  
 DATE  
 8 JAN 97  
 SHEET  
 1 OF 3





NOTES:

1. SIGNAL INPUTS TO TERMINAL BLOCKS MAY VARY IN QUANTITY AND TYPE. THE INSTALLATION SCHEME OR UNIT RECORDS WILL REFLECT ACTUAL TIME INPUTS.
  - A. VOICE/ANALOG USE SHIELDED PAIR CABLE L/I 615.
  - B. PULSE/SINE WAVE USE 50 OHM CABLE L/I 2034 (RG-174).
2. THE NUMBER OF CABLES DEPICTED TO POSITIONS ARE FOR REFERENCE ONLY. SIGNAL DISTRIBUTION WILL BE IN INSTALLATION SCHEME OR UNIT RECORDS.
3. USE RED AND BLACK SOLID CONDUCTOR WIRE TO FABRICATE TERMINAL BLOCKS. EVERY OTHER PIN WILL BE WIRED AS INDICATED.

### REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	615	CABLE, 22AWG 1 TWISTED PAIR	AS REQ
2.	2034	CABLE, RF, 50 OHM	AS REQ
3.	7647	WIRE, 22 AWG, BLACK, SOLID	AS REQ
4.	7650	WIRE, 22 AWG, RED, SOLID	AS REQ

U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE Time Distribution Terminal Board Wiring	
DRAFTSMAN P M Spalenka		SIZE C	DATE ESTABLISHED 15 MAR 85
CHECKER R E Muzzy		DRAWING NUMBER 99-09-330	
ENGINEER P M Spalenka		SCALE Full	DATE 8 JAN 97
APPROVED D. Duff			
DRAWING CONTROL # 330			

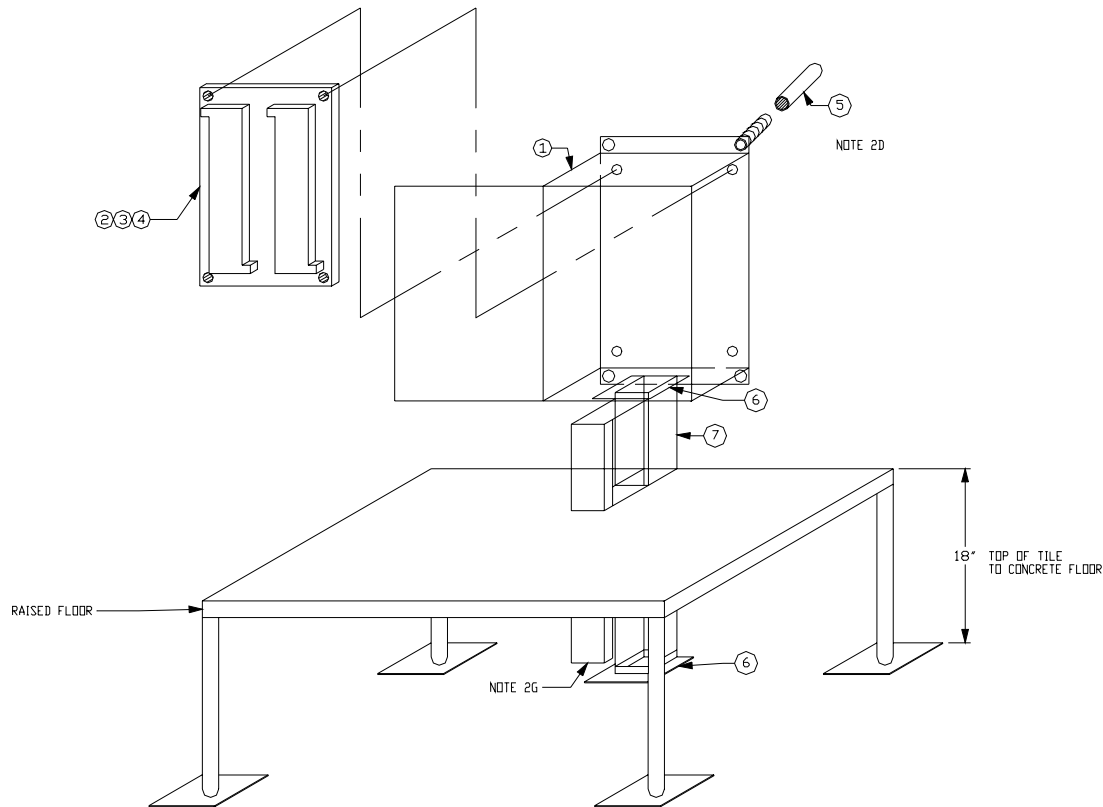
I330-3

UPDATED DRAWING IN CABS.

26 MAR 93 PMS

UPDATED NOTES AND RML.

16 JAN 97 TMH



## 1. RFJ BOX FABRICATION.

- MOUNT THE BACK PANEL IN THE JUNCTION BOX USING 10-32 SCREWS (L/I 30).
- WIRE TERMINAL BLOCKS AS INDICATED ON SHEET 2 UNLESS OTHERWISE SPECIFIED. ATTACH TERMINAL BLOCKS TO BRACKETS.
- STENCIL THE JUNCTION BOX DOOR WITH 2 INCH LETTERS SO THAT IDENTIFYING INFORMATION IS CENTERED. USE BLACK PAINT. THE BOX WILL ALWAYS BE INSTALLED SO THAT THE DOOR OPENS TO THE LEFT.
- IDENTIFYING INFORMATION SHOULD BE THE TIME SOURCE PIP # WITH JUNCTION BOX NUMBER. I.E. Q ? TB ?.

## NOTES (CONTINUED):

## 2. ON-SITE INSTALLATION INSTRUCTIONS FOR RAISED FLOOR.

- CUT OFF ONE EDGE OF FLANGE (L/I 7193). SEE DWG 99-15-346.
  - USING THE FLANGE AS A TEMPLATE, MARK AND CUT OFF A 2 1/2 INCH SQUARE HOLE CENTERED ON THE BOX BOTTOM SO THAT THE CUT EDGE WILL BE FLUSH WITH REAR OF BOX.
  - ATTACH THE FLANGE TO THE BOX USING HARDWARE PROVIDED WITH FLANGE. THE HEADS OF SCREW OR BOLTS WILL BE ON THE INSIDE OF THE BOX.
  - MOUNT THE RFJ BOX TO THE WALL USING FOUR EACH EXPANSION SHIELDS (L/I 7311) OR TOGGLE BOLTS (L/I 990). THE BOTTOM EDGE OF THE BOX SHOULD BE POSITIONED 6 FEET FROM THE CONCRETE FLOOR. THE TOP OF THE BOX SHOULD BE 4 FEET FROM THE RAISED FLOOR AND EVEN WITH THE TOP OF THE WAINSCOT. ALSO SEE DWG 99-15-346.
  - MARK AND CUT RAISED FLOOR TILE TO ALLOW 2 1/2 INCH DUCT WITH COVER TO PASS THROUGH.
  - POSITION AND MARK HOLES OF FLANGE ON CONCRETE FLOOR. USE EXPANSION SHIELDS (L/I 7311). 2 EACH. ONE EDGE OF FLANGE MUST BE CUT TO ALLOW INSTALLATION OF DUCT FLUSH TO THE WALL. ALSO SEE DWG 99-15-346.
  - MEASURE LENGTH OF NEEDED DUCT. CUT DUCT TO LENGTH. CUT THE DUCT COVER 4 INCHES SHORTER.
  - ATTACH THE DUCT TO UPPER AND LOWER FLANGES. SECURE THE LOWER FLANGE TO THE CONCRETE FLOOR.
3. IF THE TIME DISTRIBUTION BOX IS TO BE USED WITH AN OVERHEAD CABLE TRAY DISTRIBUTION SYSTEM, CUT THE FLANGE HOLE IN THE TOP OF THE BOX. USE A 2 1/2 INCH INSIDE RISER (L/I 7184) TO CROSS OVER FROM THE WALL TO THE CABLE TRAY. ATTACH THE DUCT TO THE CABLE TRAY WITH HARDWARE.

## REQUIRED MATERIALS LIST

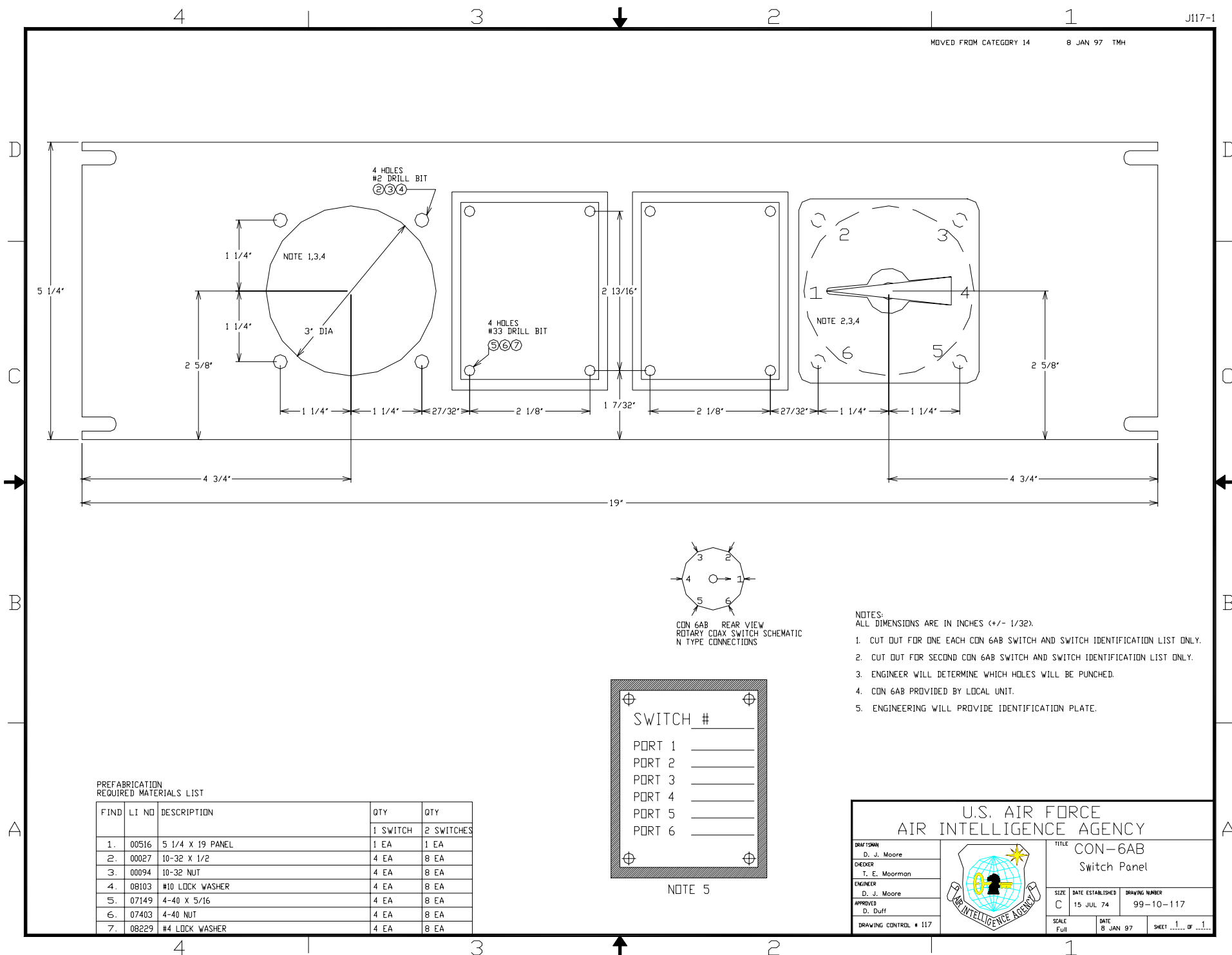
FIND	LI NO	DESCRIPTION	QTY
1.	07050	RFJ JUNCTION BOX 12W X 14H X 6D	1 EA
2.	08337	BRACKET, TERMINAL BLOCK, 2W X 1 1/2H X 10L	2 EA
3.	08339	TERMINAL BLOCK, 4 X 50 CONTACTS	2 EA
4.	07053	BACK PANEL, STEEL, 10 7/8W X 12 3/4H X 1/16THICK	1 EA
5.	07311	EXPANSION SHIELD FOR 3/8" BOLT	4 EA
6.	07193	DUCT, FLANGE 2 1/2" (HARDWARE INCLUDED)	2 EA
7.	07168	DUCT, STRAIGHT 2 1/2" (COVER AND HDWRE INCLUDED)	8 FT
8.	07184	DUCT, INSIDE RISER 2 1/2" (NOTE 4)	1 EA
9.	00990	TOGGLE BOLT, 3/8 X 3 INCHES	4 EA
10.	01074	STUD, THREADED 1 1/4" SHANK	2 EA
11.	00105	NUT, HEXAGONAL, STEEL 3/8-16	2 EA
12.	00086	WASHER, FLAT, 3/8" HOLE	2 EA

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DRAFTSMAN  
P. M. Spalenka  
CHECKER  
R. E. Muzzy  
ENGINEER  
P. M. Spalenka  
APPROVER  
D. Duff  
DRAWING CONTROL # 330



TITLE  
Time Distribution  
Junction Box  
Typical Installation  
SIZE  
C  
DATE ESTABLISHED  
15 MAR 85  
DRAWING NUMBER  
99-09-330  
SCALE  
Full  
DATE  
16 JAN 97  
SHEET  
3 OF 3



REDRAWN ON CADS  
AutoCAD Conversion

15 MAR 91  
17 JAN 96

JWL  
RWM

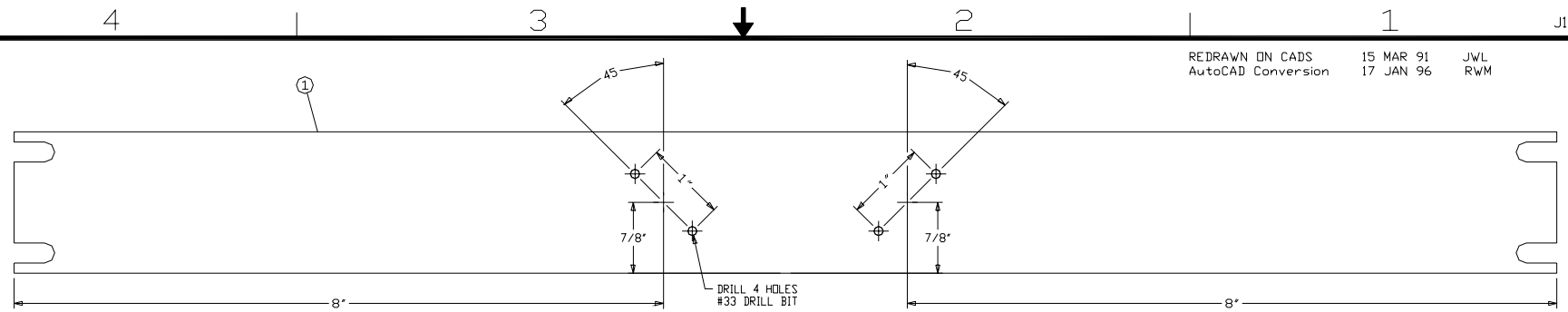


FIG.1-PANEL HOLE LOCATION

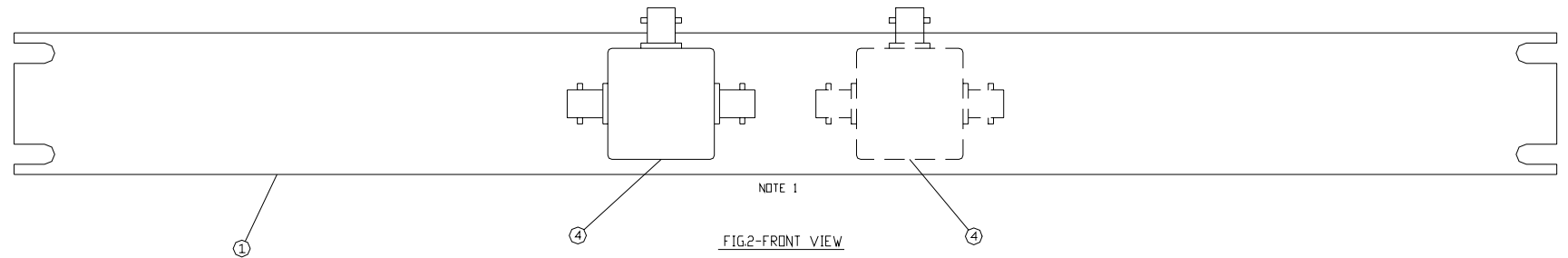


FIG.2-FRONT VIEW

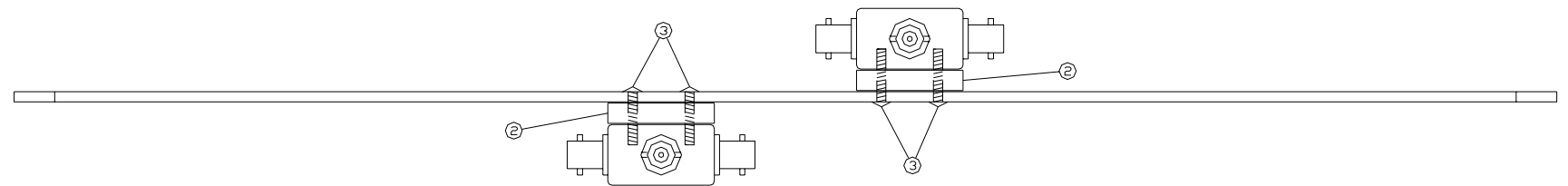


FIG.3-TOP VIEW

NOTES: ALL DIMENSIONS IN INCHES (+/- 1/32 TOLERANCE)  
ANGLE TOLERANCE +/- .5 DEGREES.

1. WHEN FOUR TV-50's ARE REQUIRED USE TWO PANELS AND MOUNT PANELS 5 1/4" APART FRONT TO BACK ON VERTICAL SUPPORTS IN REAR OF CABINET.

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	00492	1 3/4" BLANK PANEL	1 EA
2.	01776	PLASTIC SPACER	2 EA
3.	07400	4-40 X 5/8 SCREW	4 EA
4.	07514	POWER DIVIDER	2 EA

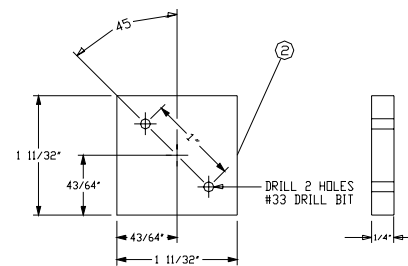


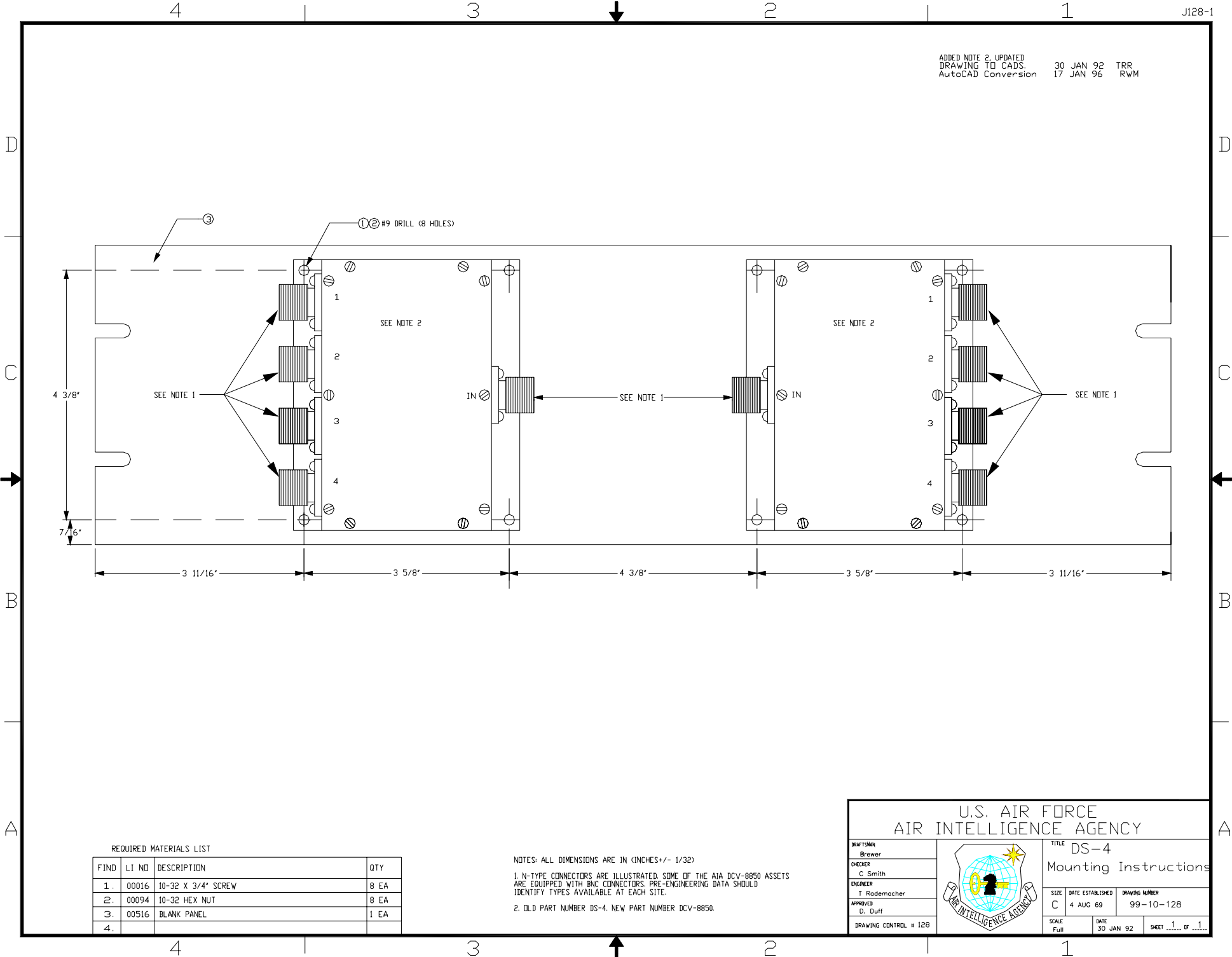
FIG.4-PLASTIC SPACER

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
J W Lacy  
CHECKER  
D J Moore  
ENGINEER  
J W Lacy  
APPROVED  
D. Duff  
DRAWING CONTROL • 127

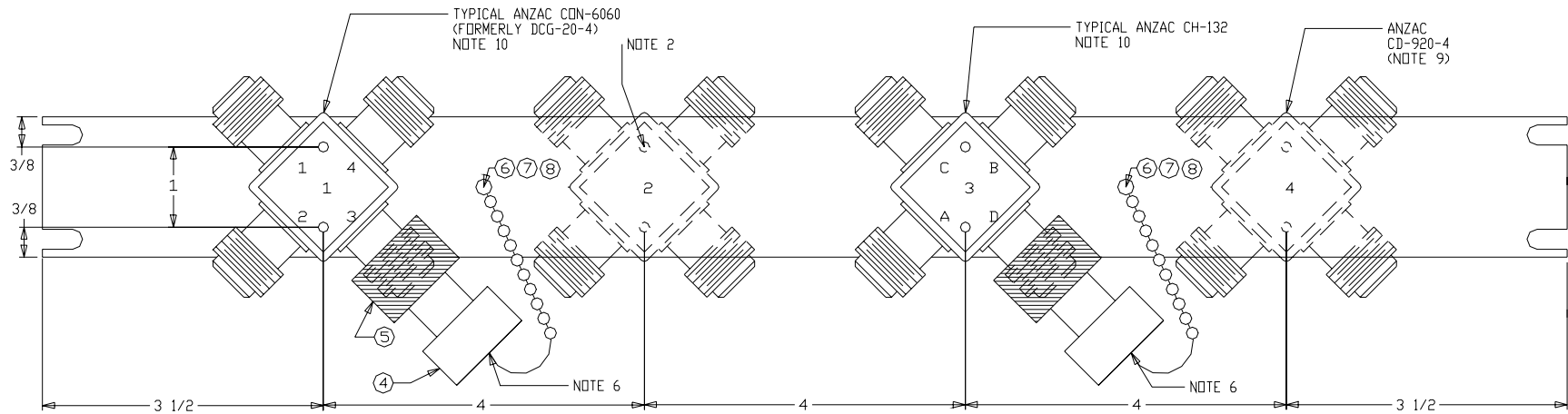


TITLE  
TV-50  
Mounting Panel  
SIZE  
C  
DATE ESTABLISHED  
19 JUN 69  
DRAWING NUMBER  
99-10-127  
SCALE  
Full  
DATE  
15 MAR 91  
SHEET 1 OF 1

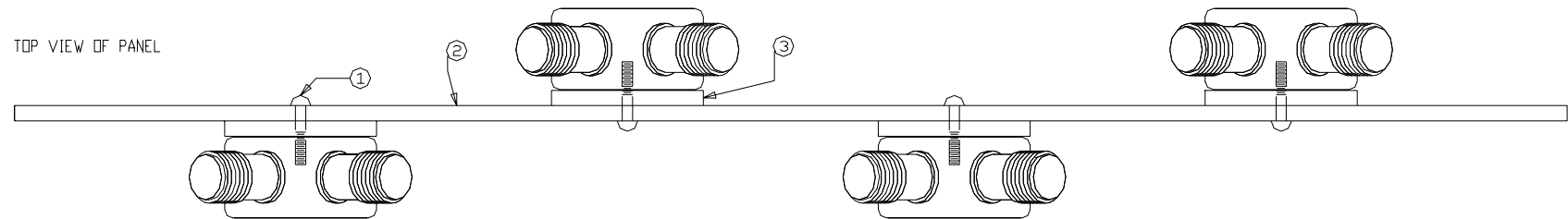
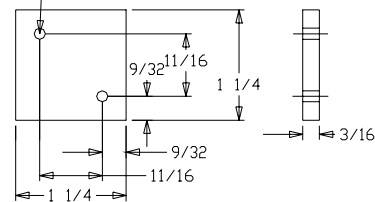


ADDED L/I 665  
 UPDATED RML  
 AutoCAD Conversion  
 ADDED L/I 665 TO RML

6 JUL 89 WCD  
 4 JAN 93 PMS  
 17 JAN 96 RWM  
 25 MAR 97 PMS

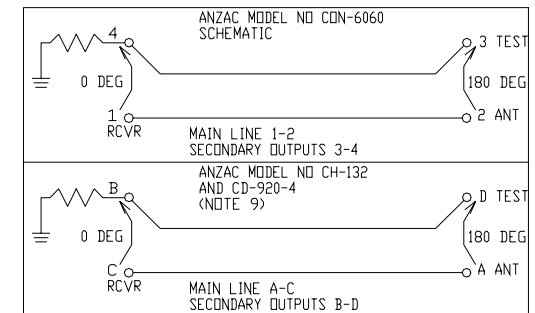


TOP VIEW OF PANEL

PHENOLIC SPACER DETAILS.  
 DRILL 2 EA. HOLES 1/8 DIA.

## NOTES:

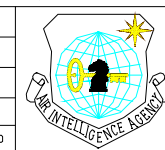
- ALL DIMENSIONS ARE IN INCHES.
- MOUNTING PANEL IS STANDARD 1 3/4 X 19 X 1/8 INCH. (LI 0492)
- DRILL ALL HOLES FOR A #4 SCREW WITH #33 DRILL BIT. MOUNTING HOLES MAY VARY WITH THE MODEL OF COUPLER SUPPLIED AS EQUIVALENT.
- PHENOLIC SPACER IS INSTALLED BETWEEN COUPLER AND PANEL.
- THE COUPLERS ARE TAPPED FOR #4 X 40 SCREWS, 2 EACH. (LI 7400).
- THESE PANELS MAY BE MOUNTED IN THE REAR OF RACKS.
- TERMINATE UNUSED SECONDARY PORT WITH 50 OHM RESISTOR. NORMAL 20 DB COUPLING IS BETWEEN 1 AND 4, AND 2 AND 3.
- FAB REQUEST WILL STATE MOUNTING AND MATERIALS FOR LESS THAN FOUR COUPLERS.
- TERMINATION RESISTORS (LI 00333) AND ADAPTERS UG-201A-U (LI 00307) WILL BE INSTALLED AS SHOWN UNLESS OTHERWISE SPECIFIED IN FAB REQUEST.
- FOR CD-920-4 BI-DIRECTIONAL COUPLER USE LI 665. THE STANDARD CONNECTOR TYPE IS BNC. TNC, SMA OR N TYPE CONNECTORS MUST BE SPECIAL ORDERED.
- ANZAC CON-6060 AND CH-132 HAVE N TYPE CONNECTORS.



FIND	L/I	DESCRIPTION	QTY
1.	07400	4 - 40 X 5/8 MACHINE SCREW	8 EA
2.	00492	1 3/4" BLANK PANEL	1 EA
3.	00692	1 1/4X1 1/4X3/16 PHENOLIC SPACER	4 EA
4.	00333	TERMINATION RESISTORS 50 OHM	AS REQ
5.	00307	UG-201A U ADAPTERS	AS REQ
6.	00013	6-32 X 1/2 SCREW	AS REQ
7.	08033	6-32 NUT	AS REQ
8.	00090	#6 WASHER, LOCK	AS REQ
	00665	ADAPTER, CONNECTOR	AS REQ

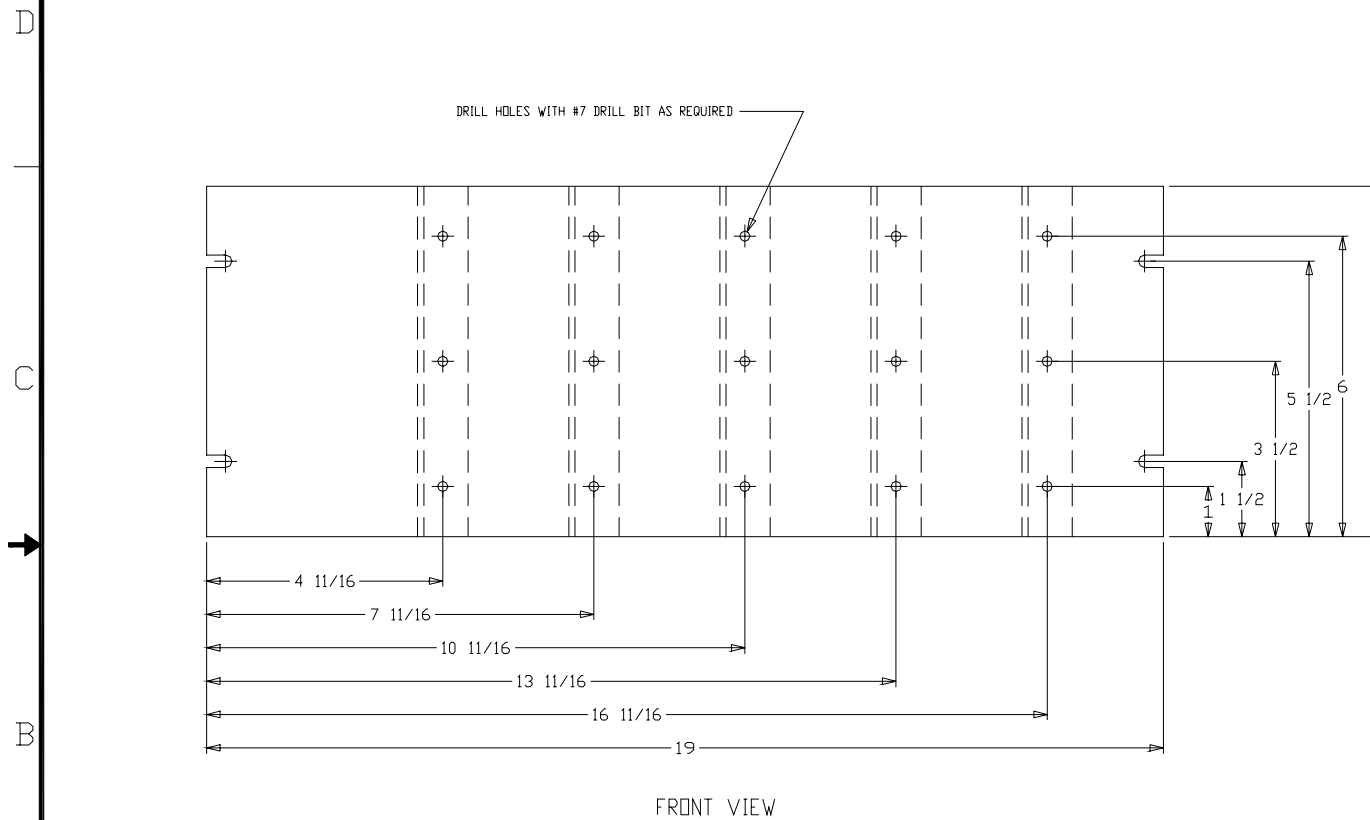
U.S. AIR FORCE  
 AIR INTELLIGENCE AGENCY

DRAWN  
 D. J. Moore  
 CHECKED  
 W. C. O'Connor  
 ENGINEER  
 W. C. O'Connor  
 APPROVED  
 D. Duff  
 DRAWING CONTROL # 130



TITLE  
 BI Directional  
 Mounting Panel

SIZE C DATE ESTABLISHED 06 OCT 69 DRAWING NUMBER 99-10-130  
 SCALE Full DATE 25 MAR 97 SHEET 1 OF 1



## NOTES

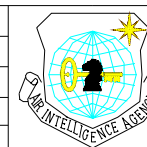
1. THE SITE ENGINEER WILL DETERMINE WHICH AND HOW MANY HOLES NEEDED TO BE DRILLED IN THIS PANEL.
2. DASHED LINES DEPICT POWER DIVIDER MOUNTING BRACKET ON REAR OF PANEL.

## MATERIAL SPECIFICATIONS:

STANDARDS 7 X 19 X 1/8 BLANK PANEL (L1-01537)  
 TOLERANCE: .01 INCH  
 ALL DIMENSIONS ARE IN INCHES

# U.S. AIR FORCE AIR INTELLIGENCE AGENCY

DRAFTSMAN  
Brewer  
 CHECKER  
G K Beckvar  
 ENGINEER  
G Locklear  
 APPROVED  
D. Duff  
 DRAWING CONTROL • 149



TITLE DS-8/DS-309  
 Panel Mounting  
 Five Unit

SIZE C DATE ESTABLISHED 08 APR 70 DRAWING NUMBER 99-10-149

SCALE Full DATE 15 JUL 88 SHEET 1 OF 2

J149-2

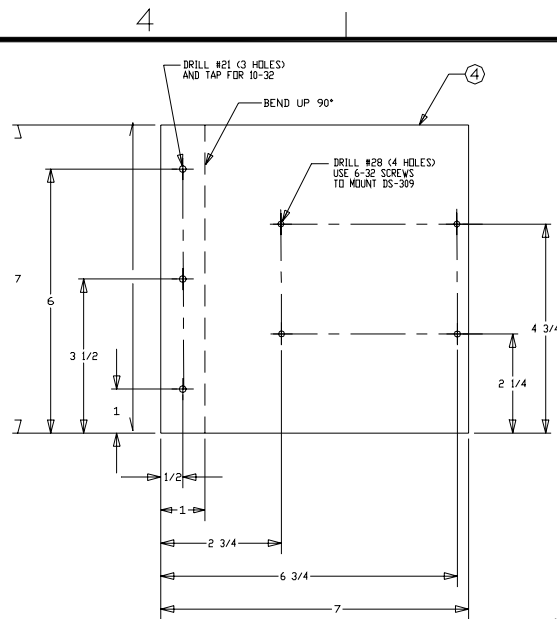


FIG. 1  
DS-309 MOUNTING BRACKET

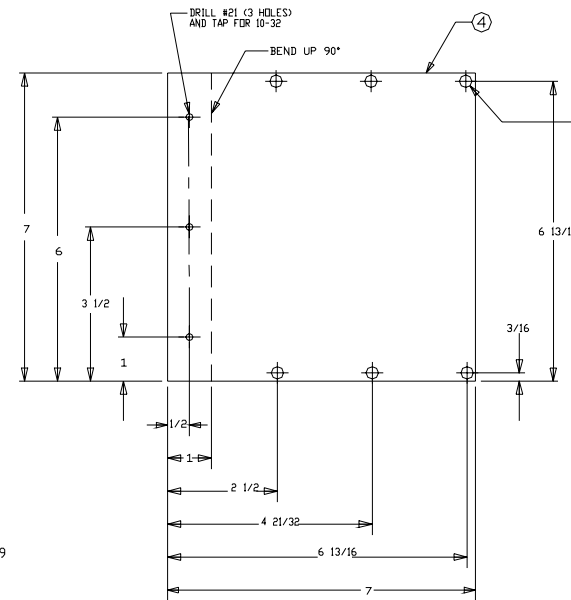


FIG. 2  
DS-8 MOUNTING BRACKET

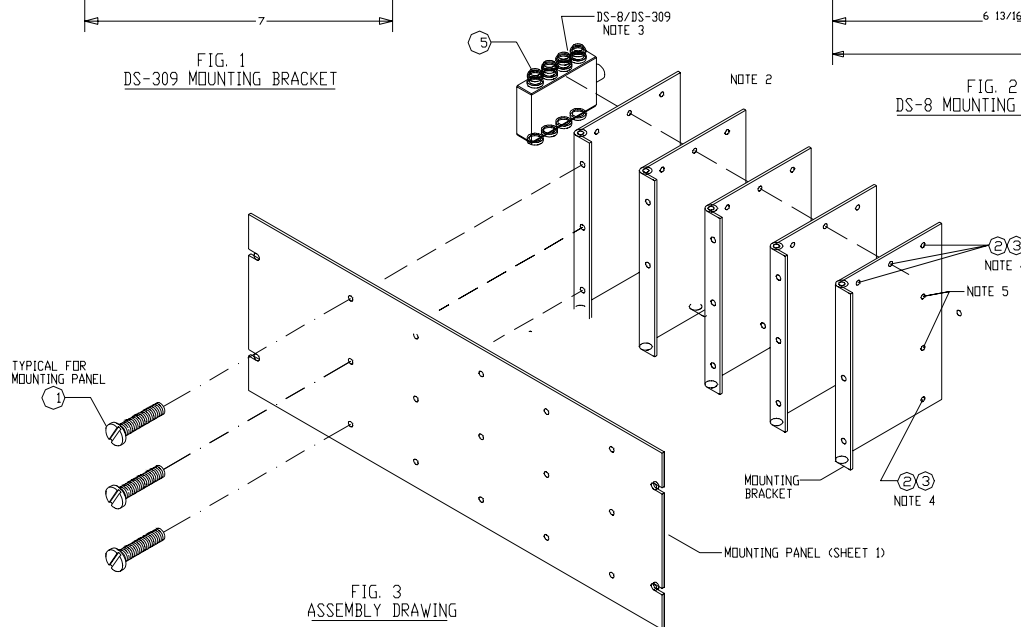


FIG. 3  
ASSEMBLY DRAWING

#### REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY FIG 1	QTY FIG 2
1.	00027	10-32 X 1/2 INCH SCREWS (3 PER BRACKET)	3 EACH	3 EACH
2.	00047	6-32 X 1/2 INCH SCREWS	4 EACH	6 EACH
3.	00096	6-32 NUTS		6 EACH
4.	01537	7 INCH BLANK PANEL (SEE NOTE 1)	AS REQ	AS REQ
5.	07515	DS-8/DS-309	AS REQ	AS REQ

ADDED DS-309 MOUNTING PANEL.  
NOTES 4,5; UPDATED RML  
UPDATED  
AutoCAD Conversion

15 JUL 88 DLF  
15 JUN 91 AGM  
17 JAN 96 RWM

#### NOTES:

ALL DIMENSIONS ARE IN INCHES (+ OR - 1/32 INCH)  
ANGLE TOLERANCE (+ OR - .5 DEGREE)

1. IT WILL BE NECESSARY TO CUT THE BLANK PANELS  
TO MATCH DIMENSIONS IN FIGURES 1 AND 2.

2. ENGINEER WILL DETERMINE QUANTITY AND PLACEMENT  
OF POWER DIVIDER MOUNTING BRACKETS.

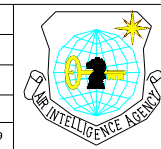
3. BNC-TYPE CONNECTORS ARE SHOWN. SOME DS-8'S ARE  
EQUIPPED WITH N-TYPE CONNECTORS.

4. THESE HOLES ARE FOR MOUNTING DS-8'S MOUNTING BRACKETS.

5. THESE HOLES ARE FOR MOUNTING DS-309 MOUNTING BRACKETS.

#### U.S. AIR FORCE AIR INTELLIGENCE AGENCY

DRAFTSMAN  
Brewer  
CHECKER  
G K Beckvar  
ENGINEER  
G Locklear  
APPROVER  
D. Duff  
DRAWING CONTROL # 149



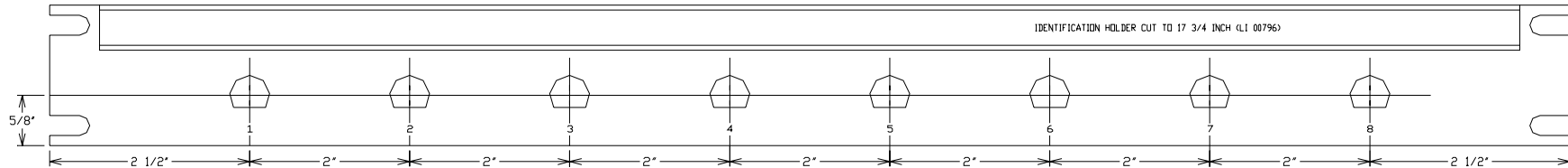
TITLE  
DS-8/DS-309  
Panel Mounting  
Five Unit  
SIZE C DATE ESTABLISHED 08 APR 70 DRAWING NUMBER 99-10-149  
SCALE Full DATE 15 JUN 91 SHEET 2 OF 2



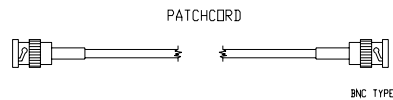
UPDATED DRAWING IN CADS  
AutoCAD Conversion3 FEB 92 PMS  
17 JAN 96 RWM

STANDARD 19 X 1 3/4 X 1/8 ALUMINUM PANEL (LI 00492)

IDENTIFICATION HOLDER CUT TO 17 3/4 INCH (LI 00796)



NOTE 3



## NOTES:

ALL DIMENSIONS ARE IN INCHES (+/- 1/32)

1. THIS DRAWING DEPICTS A UNIVERSAL FEED THRU AND PATCH PANEL. IT WILL BE USED IN CONJUNCTION WITH FABRICATION LISTS TO PROVIDE DIFFERENT COMBINATIONS OF FEED THRU OR PATCHING REQUIREMENTS.
2. THE FABRICATION LIST WILL DIRECT THE SPECIFIC HOLES TO BE PUNCHED AND LABELED BY HOLE NUMBER.
3. ALL HOLES WILL BE 1/2 INCH DIAMETER D HOLES WITH BNC TYPE ADAPTER BULKHEAD (LI 00275) INSTALLED.
4. THE FABRICATION LIST WILL SPECIFY THE AMOUNT, CABLE TYPE, LENGTH, AND BNC CONNECTORS TO BE USED FOR PATCHCORDS.

CABLE P/N	L/I	C TYPE CONN	BNC TYPE CONN
RG-214	00544	L/I 00342	
RG-216	00540	L/I 00327	
RG-223	00383	L/I 00654	L/I 00394
RG-307	00177	L/I 00170	L/I 00169
RG-62	00541	L/I 00337	L/I 00360

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

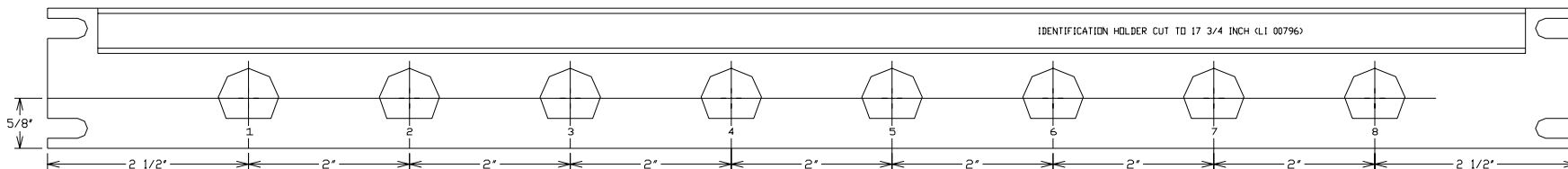
DRAWN BY  
Brewer  
CHECKED  
C. Smith  
ENGINEER  
P. M. Spalenka  
APPROVED  
D. Duff  
DRAWING CONTROL # 157



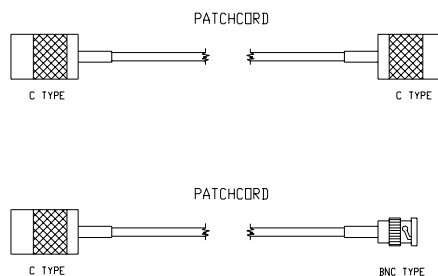
TITLE  
General Category  
Panel for Feed Through  
"BNC" Type Connectors  
SIZE  
C  
DATE ESTABLISHED  
18 FEB 71  
DRAWING NUMBER  
99-10-157  
SCALE  
Full  
DATE  
03 FEB 92  
SHEET  
1 OF 1

STANDARD 19 X 1 3/4 X 1/8 ALUMINUM PANEL (LI 00492)

IDENTIFICATION HOLDER CUT TO 17 3/4 INCH (LI 00796)



NOTE 3



## NOTES:

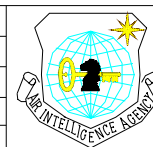
ALL DIMENSIONS ARE IN INCHES (+/- 1/32)

1. THIS DRAWING DEPICTS A UNIVERSAL FEED THRU AND PATCH PANEL. IT WILL BE USED IN CONJUNCTION WITH FABRICATION LISTS TO PROVIDE DIFFERENT COMBINATIONS OF FEED THRU OR PATCHING REQUIREMENTS.
2. THE FABRICATION LIST WILL DIRECT THE SPECIFIC HOLES TO BE PUNCHED AND LABELED BY HOLE NUMBER.
3. ALL HOLES WILL BE 3/4 INCH DIAMETER D HOLES WITH C TYPE ADAPTER BULKHEAD (LI 01283) INSTALLED.
4. THE FABRICATION LIST WILL SPECIFY THE AMOUNT, CABLE TYPE, LENGTH, AND TYPE CONNECTORS TO BE USED FOR PATCHCORDS.

CABLE P/N	L/I	C TYPE CONN	BNC TYPE CONN
RG-214	00544	L/I 00342	
RG-216	00540	L/I 00327	
RG-223	00383	L/I 00654	L/I 00394
RG-307	00177	L/I 00170	L/I 00169
RG-62	00541	L/I 00337	L/I 00360

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
Brewer  
CHECKER  
C. Smith  
ENGINEER  
P. M. Spalenka  
APPROVED  
D. Duff  
DRAWING CONTROL • 179



TITLE  
General Category  
Panel For  
"C" Type Connectors

SIZE  
C  
DATE ESTABLISHED  
5 MAR 71  
DRAWING NUMBER  
99-10-179  
SCALE  
Full  
DATE  
3 FEB 92  
SHEET 1 OF 1

4

3

2

1

J194-1

UPDATED TO CADS. CHANGED FROM  
RG-58 AND RG-59 TO RG-223 AND  
RG-307 AND THEIR CONNECTORS.  
ADDED SHEET 2  
MOVED FROM CATEGORY 17

05 JUN 92 TRR  
8 JAN 97 TMH

## ADAPTERS

ADAPTER TYPE TO TYPE	NATIONAL STOCK NUMBER	PART NUMBER	LINE ITEM
TWIN (F) TO UHF (M)	5935-00-565-3095	UG-970/U	00309
C (M) TO BNC (F)	5935-00-557-9862	UG-636/U	00308
UHF (M) TO C (F)	5935-00-527-0320	UG-838/U	00831
N (F) TO C (M)	5935-00-665-6543	UG-565A	00261
BNC (M) TO BNC (M)	5935-00-681-5013	UG-491	00317
BNC (M) TO N (F)	5935-00-732-1919	UG-349A	00229
N (F) TO N (F)	5935-01-035-5650	UG-29C/U	00841
N (F) TO C (F) 90 DEGREE	5935-00-892-9777	83875	01068
BNC (F) TO DUAL BANANA	5935-00-053-9454	1269	00234
BNC TEE (FMF)	5935-00-926-7523	UG-274B/U	00289
N TEE (FMF)	5935-00-149-3304	UG-107B/U	00214
TPS NETWORK 50 OHM (MFF)	5935-01-020-4692	PNM2A	00594
N (M) TO C (F)	5935-01-067-2925	MS35321-1	00260
C (F) TO C (F)	5935-00-259-0019	UG-643/U	00356
N (M) TO BNC (F)	5935-00-259-0205	UG-201/U	00307
UHF (M) TO BNC (F)	5935-00-149-3534	UG-273	00837
C (F) TO (M) 90	5935-00-201-2755	UG-567A/U	00359
BNC (M) TO C (F)	5935-00-201-8420	UG-635	00233
BNC (FF)	5935-01-037-3476	UG-914/U	00824
C TEE (FMF)	5935-00-636-8411	UG-566/U	00318
C (F) 90 TO TWIN	5935-00-201-2410	UG-971	00226
BNC NETWORK 50 OHM (FMM)	5935-00-015-1319	PN-2	00279
BNC NETWORK 50 OHM (MFF)	5935-00-989-2863	PN-2A	00280
N (F) BULKHEAD	5935-01-033-9639	UG-300/U	00263
BNC (FF) BULKHEAD	5935-00-823-0308	UG-492D/U	00275
BNC (F) BULKHEAD	5935-00-892-9035	UG-657/U	02083
C (F) BULKHEAD	5935-00-997-1333	UG706BU	00401
C (FF) BULKHEAD	5935-01-048-8403	MS90266-701A	01283
BNC (F) TO TPS (M)	XXXX-XX-XXX-XXXX	AD-BJ20	00306
N TERM U/F RG-319 (F)	5935-00-850-8186	87N3	01190
BNC (M) 100 OHM TERM	5935-00-682-2700	MX554A/U	01112
BNC (M) 51 OHM TERM	5935-00-843-1671	35725-51	00333
C (M) 75 OHM TERM	5935-00-089-7019	83925-75	00334
N (M) 51 OHM TERM	5935-00-947-1266	5N000-51	00349
C (F) 90 TO BNC (M)	5935-01-032-5404	MS5339/14-00306	00367
N (M) TO (F) 90 DEGREE	5935-00-904-4050	UG-270/U	00239
PARALLEL NETWORK 75 OHM	5995-00-172-9086	PN-3-75	00281
PARALLEL NETWORK 50 OHM	5915-00-123-6722	28-50	00282
PARALLEL NETWORK 50 OHM	5915PPN3A-50	3A-50	00283
PARALLEL NETWORK 50 OHM	5915-01-009-0164	3-50	00284
PARALLEL NETWORK 93 OHM	5815-00-123-6718	3-93	00285

NOTE 1


NOTE 1

## RF CONNECTOR CROSS REFERENCE

SERIES	CONNECTOR TYPE	CABLE TYPE	NATIONAL STOCK NUMBER	LINE ITEM
BNC	PLUG (M)	RG-223	5935-01-043-0629	00394
BNC	PLUG (M)	RG-55,62,223,307	5935-00-073-9956	00169
BNC	PLUG (M)	RG-174	5935-00-463-2495	00404
N	PLUG (M)	RG-223	5935-00-594-7689	01800
N	PLUG (M)	RG-62,307	5935-00-259-0205	00307
N	PLUG (M)	RG-214	5935-00-933-8061	00357
N	JACK (F)	RG-214	5935-00-164-9649	00355
N	JACK (F)	RG-333	5935-00-900-1132	05141
BNC	PLUG (M)	RG-55	5935-00-461-9141	00362
N	SEAL (M)	RG-331	5935-00-897-9788	06471
C	PLUG (M)	RG-216	5935P225013-9	00327
C	JACK (F)	RG-216	5935PKD-39-12	00328
C	PLUG (M)	RG-62,307	5935-00-158-4934	00170
C	PLUG (M)	RG-223	5935PKD5963	00654
C	PLUG (M)	RG-214	5935PPKD-59-52	00342
TNC	PLUG (M)	RG-223	5935-01-110-3382	00664
BNC	PLUG (M)	RG-122	5935-00-213-6060	00361
TPS	PLUG (M)	RG-174	5935-00-493-3244	00374
TPS	PLUG (M)	RG-307	XXXX-XX-XXX-XXXX	00306
SPLICE		RG-333	5935-00-836-4828	05142
END SEAL	ACCEPTS N (M)	SPIR-D-LINE	5935-00-243-5492	06146
TPS	PLUG (M)	RG-122	5935-00-166-4697	00373
BNC	PLUG (M)	RG-307AU	5935-00-073-9956	00169
C	PLUG (M)	RG-307AU	5935-00-158-4934	00170
C	JACK (F)	RG-216	5935-00-201-5209	00340
TPS	PLUG (M)	RG-223	5935-01-057-0899	01801

## NOTES:

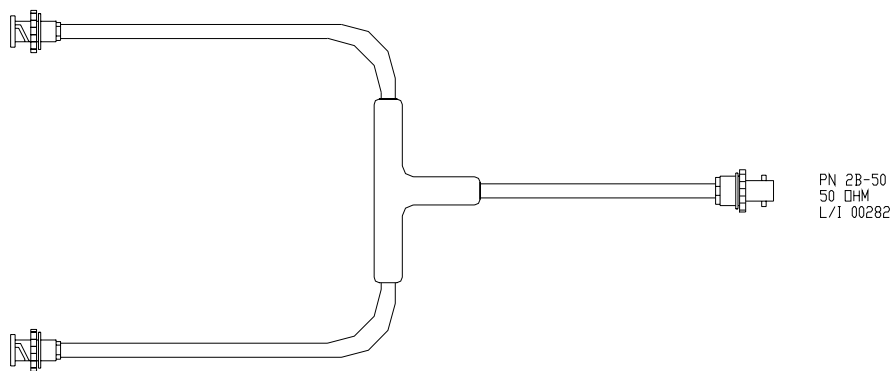
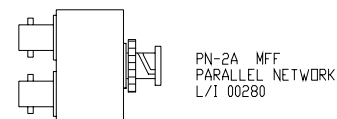
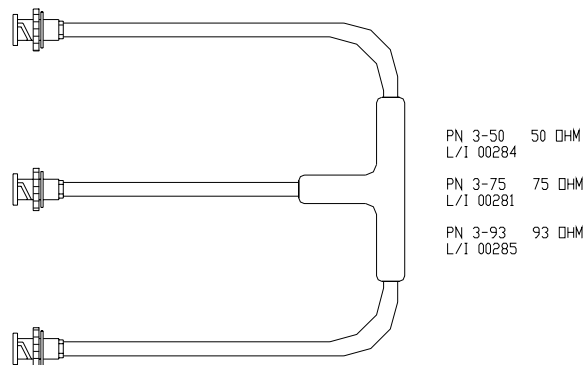
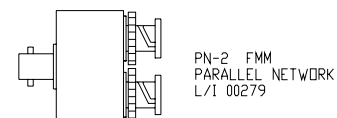
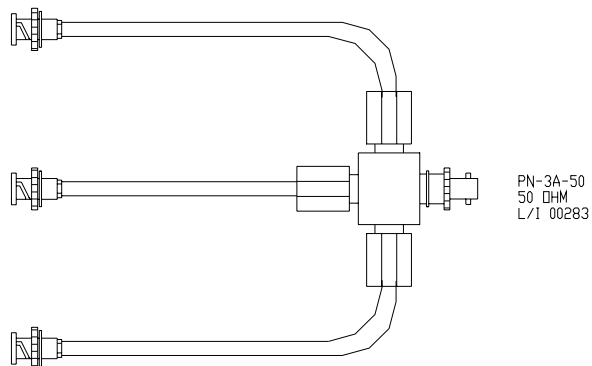
1. SEE SHEET 2 FOR ILLUSTRATION.


U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE Cross-Reference RF Connector & RF Adapters	
DRAFTSMAN Brewer		SIZE C	DATE ESTABLISHED 5 NOV 71
CHECKER C. Smith		DRAWING NUMBER 99-10-194	
ENGINEER T. R. Rademacher		SCALE Full	DATE 8 JAN 97
APPROVER D. Duff		SHEET 1 OF 2	
DRAWING CONTROL # 194			

MOVED FROM CATEGORY 17.

8 JAN 97 TMH

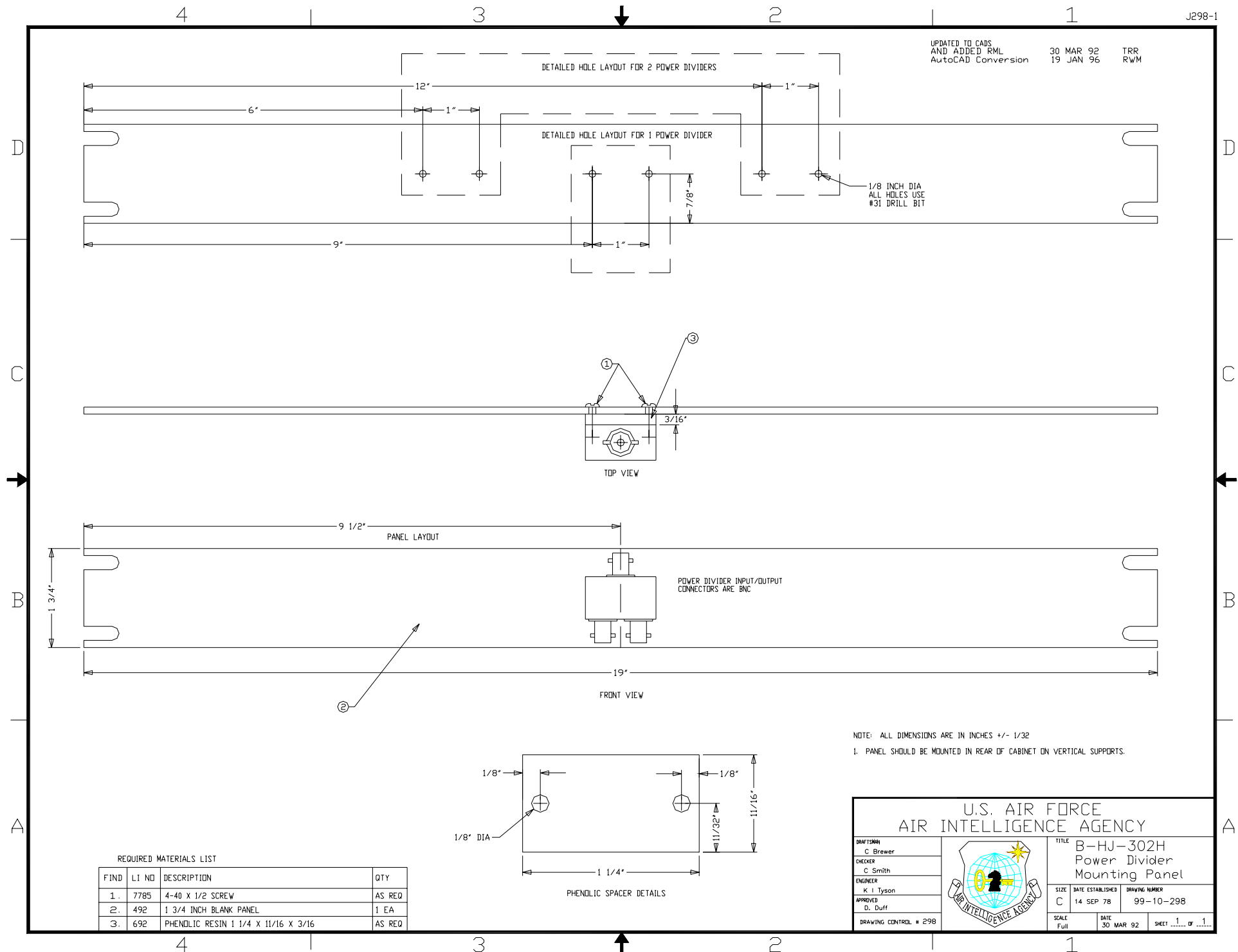
## COAXIAL PARALLEL NETWORKS



U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN Brewer CHECKER C. Smith ENGINEER T. R. Rademacher APPROVED D. Duff DRAWING CONTROL # 194		TITLE BNC Parallel Networks 	
SIZE C	DATE ESTABLISHED 5 JUN 92	DRAWING NUMBER 99-10-194	
SCALE Full	DATE 8 JAN 97	SHEET 2 OF 2	



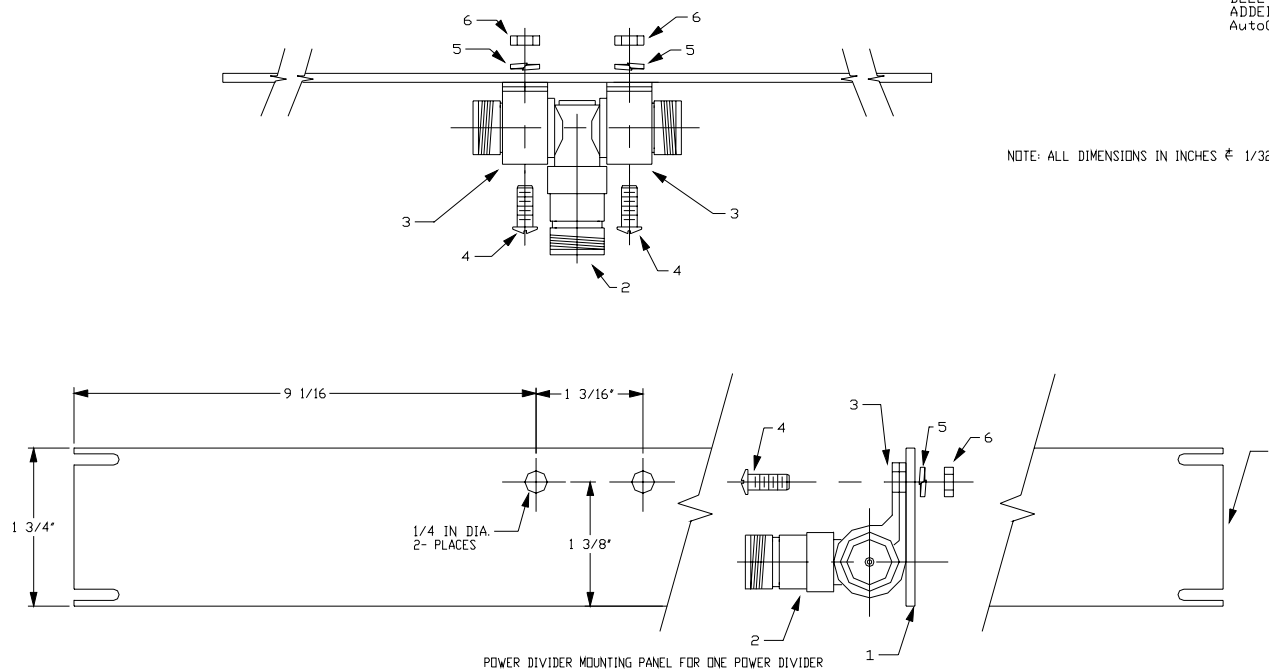
J298-1



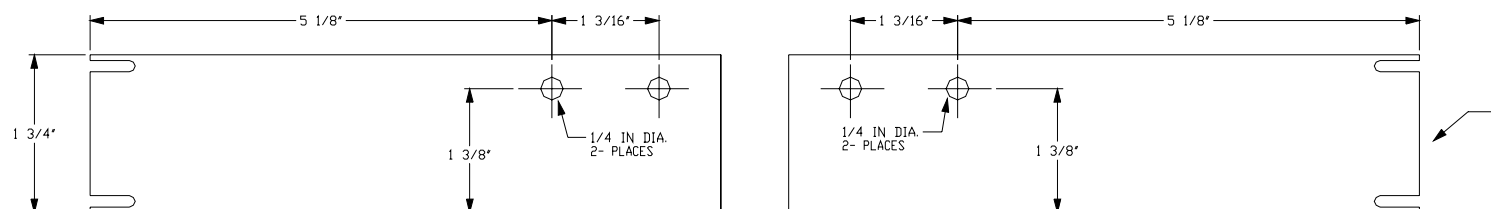
ADDED POWER DIVIDER TO RML  
DELETED LI 148, ADDED LI 960  
ADDED LI'S 16,94,103  
AutoCAD Conversion

7 OCT 86 WBF  
30 APR 90 DDG  
19 JAN 96 RWM

NOTE: ALL DIMENSIONS IN INCHES  $\pm$  1/32".



FIND NO.	DESCRIPTION	LINE ITEM	QTY
1	1 3/4" BLANK PANEL	00492	1
2	DA-4FN POWER DIVIDER	07503	1
3	CLAMP	00960	2
4	SCREW	00016	2
5	WASHER	00103	2
6	NUT	00094	2



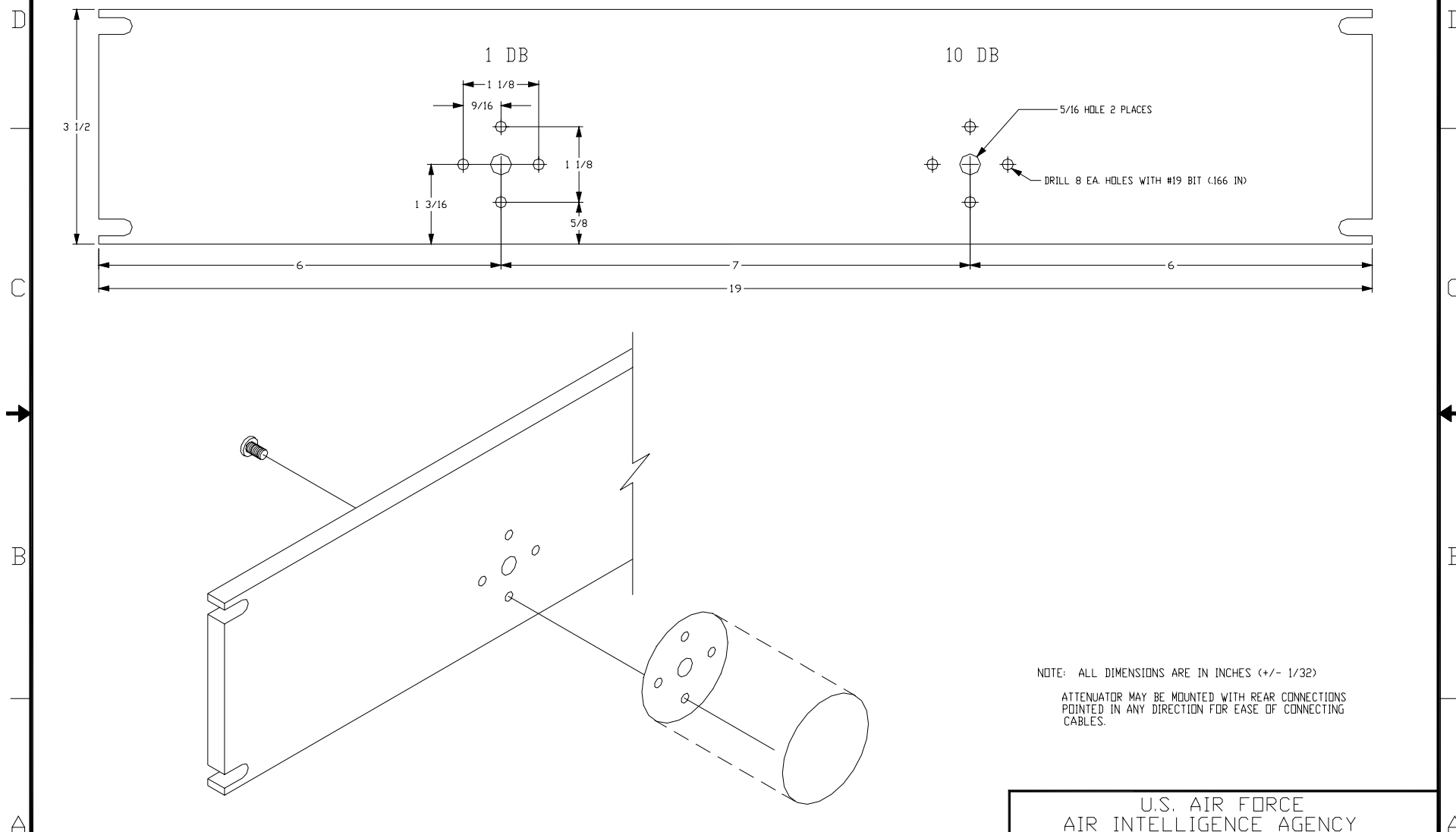
FIND NO.	DESCRIPTION	LINE ITEM	QTY
1	1 3/4" BLANK PANEL	00492	1
2	DA-4FN POWER DIVIDER	07503	2
3	CLAMP	00960	4
4	SCREW	00016	4
5	WASHER	00103	4
6	NUT	00094	4

U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN Mesheuw		TITLE DA-4FN Power Divider Panel Mounting	
CHECKER J. D. Moore		SIZE C	DATE ESTABLISHED 31 AUG 78
ENGINEER D. Griffith		DRAWING NUMBER 99-10-302	
APPROVER D. Duff		SCALE Full	DATE 30 APR 90
DRAWING CONTROL # 302		SHEET 1 OF 1	

UPDATED TO CADS, ADDED RML  
AutoCAD Conversion

28 OCT 92  
19 JAN 96

TRR  
RWM

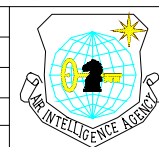


## REQUIRED MATERIALS LIST

FIND	LT NO	DESCRIPTION	QTY
1.	7094	8-32 X 1 INCH SCREW	8
2.	510	3 1/2 INCH BLANK PANEL	1

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAWN BY  
T. R. Rademacher  
CHECKED  
C. Smith  
ENGINEER  
T. J. Magnone  
APPROVED  
D. Duff



TITLE  
Attenuator  
Mounting Panel

SIZE DATE ESTABLISHED DRAWING NUMBER  
C 15 SEP 78 99-10-303

SCALE DATE SHEET  
Full 28 OCT 92 1 OF 1

DRAWING CONTROL # 303

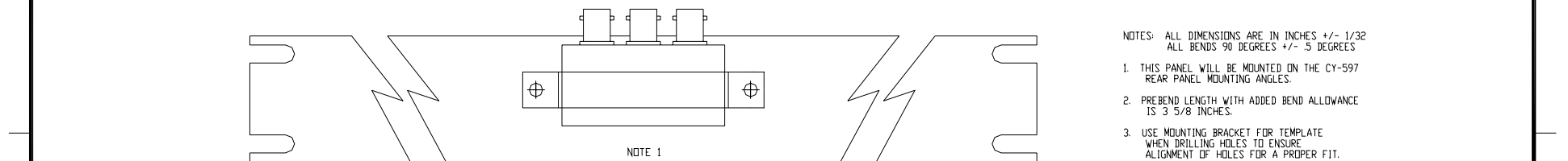
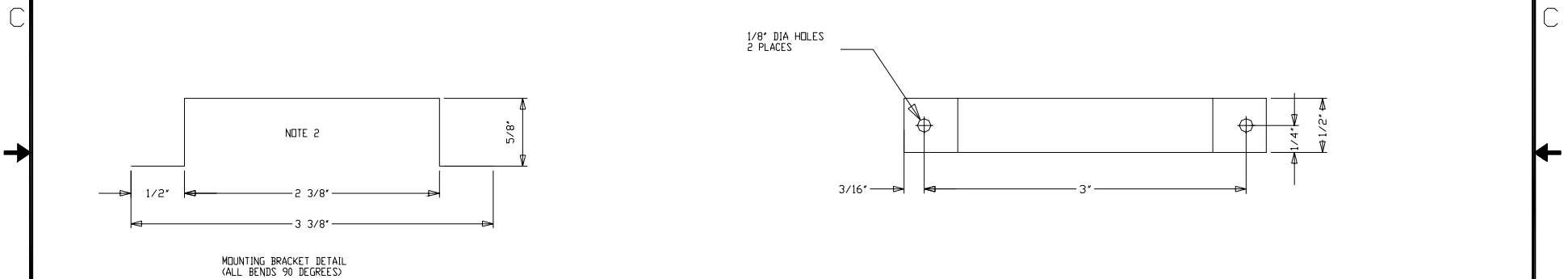
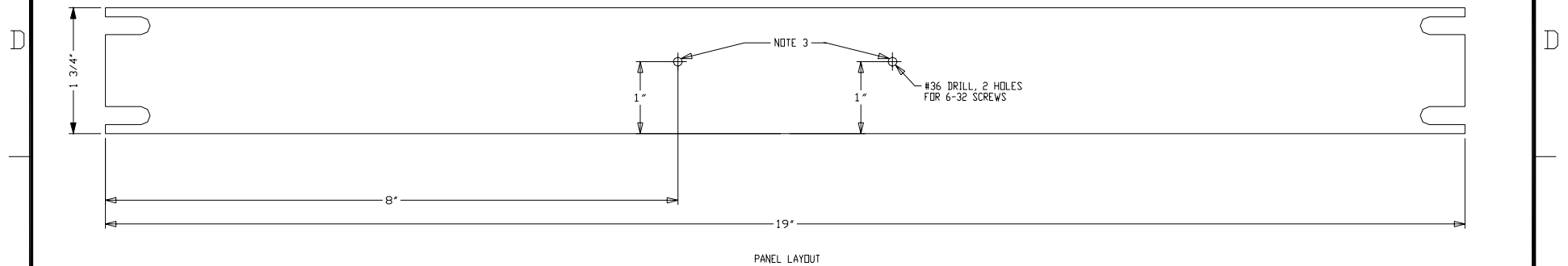


J304-1

UPDATED TO CADS, AND  
ADDED NOTES 2 AND 3  
AutoCAD Conversion

1 APR 92  
19 JAN 96

TRR  
RWM



NOTES: ALL DIMENSIONS ARE IN INCHES +/- 1/32  
ALL BENDS 90 DEGREES +/- 5 DEGREES

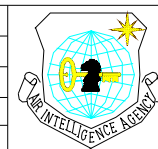
- THIS PANEL WILL BE MOUNTED ON THE CY-597 REAR PANEL MOUNTING ANGLES.
- PREBEND LENGTH WITH ADDED BEND ALLOWANCE IS 3 5/8 INCHES.
- USE MOUNTING BRACKET FOR TEMPLATE WHEN DRILLING HOLES TO ENSURE ALIGNMENT OF HOLES FOR A PROPER FIT.

## REQUIRED MATERIALS LIST

FIND	L1 NO	DESCRIPTION	QTY
1.	47	6-32 X 1/2 INCH SCREW	2 EA
2.	96	6-32 NUT	2 EA
3.	492	1 3/4 INCH BLANK PANEL	1 EA
4.	705	COLD ROLLED STEEL	AS REQ

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
C. Brewer  
CHECKER  
C. Smith  
ENGINEER  
T. J. Magnone  
APPROVED  
D. Duff  
DRAWING CONTROL # 304



TITLE  
Frequency Mixer  
Mounting Panel

SIZE DATE ESTABLISHED DRAWING NUMBER  
C 15 SEP 78 99-10-304

SCALE DATE SHEET  
Full 01 APR 92 1 OF 1

UPDATED TO CADS 01 APR 92 TRR  
AutoCAD Conversion 19 JAN 96 RWM

D

C

B

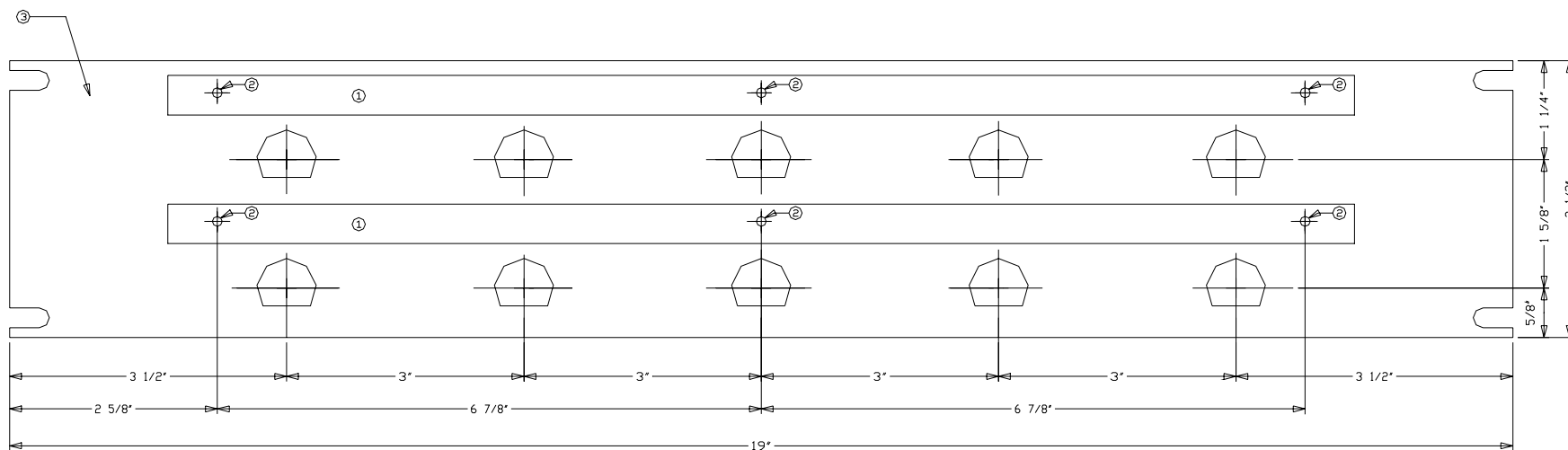
A

D

C

B

A



# LEGEND

NO.	CABLE P/N	LI NO.	CONNECTOR P/N	LI NO.
1.	RG-214	544	N TYPE	357
2.	RG-307	177	BNC TO N TYPE	307 & 169
3.	RG-223	383	N TYPE	1800

NOTE 3

NOTE 3

NOTE 3

# REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	796	I.D. STRIP, 15 INCH LONG	4 EA
2.	22	RIVET, STEEL	6 EA
3.	510	3 1/2" BLANK PANEL	1 EA

NOTES: ALL DIMENSIONS ARE IN INCHES +/- 1/32

1. THE FABRICATION LIST WILL DIRECT THE SPECIFIC HOLES TO BE PUNCHED AND LABELED BY HOLE NUMBER.
2. ALL HOLES ARE 5/8 INCH DIAMETER "D" HOLES WITH "D" TYPE ADAPTER BULKHEAD (LI 263) INSTALLED.
3. THE FABRICATION LIST WILL SPECIFY THE AMOUNT, CABLE TYPE, LENGTH, AND TYPE CONNECTORS TO BE USED FOR PATCH CORDS.

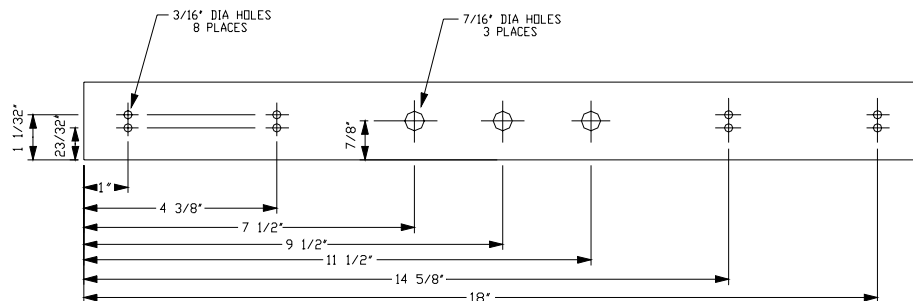
# U.S. AIR FORCE AIR INTELLIGENCE AGENCY

DRAFTSMAN  
Brewer  
CHECKER  
C. Smith  
ENGINEER  
D. L. Stotler  
APPROVER  
D. Duff  
DRAWING CONTROL # 317



TITLE  
General Category  
Panel Feed Through  
"N" Type Connectors  
SIZE  
C  
DATE ESTABLISHED  
12 MAR 80  
DRAWING NUMBER  
99-10-317  
SCALE  
Full  
DATE  
01 APR 92  
SHEET  
1 OF 1

CHANGED L/1 12 TO L/1 13  
MOVED FROM CATEGORY 14 PES 22JUN90  
8 JAN 97 TMH



T-PAD LABELING TABLE			
RCVR TYPE	T-PAD #1	T-PAD #1	T-PAD #3
WJ-861X	MAIN AUDIO	USB/TSB	LSB/TSB
R-2174	USB/AM/FM/CW	NOT REQ	LSB

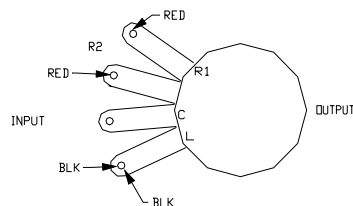
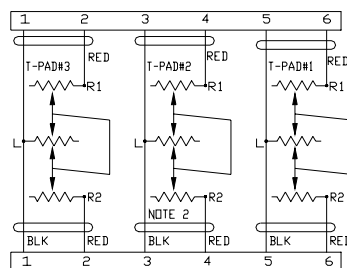


FIG. 2 T-PAD WIRING DETAIL  
(REAR VIEW)



TB-1 INPUT  
FROM RECEIVER  
PANEL WIRING  
(REAR VIEW)  
FIG. 3

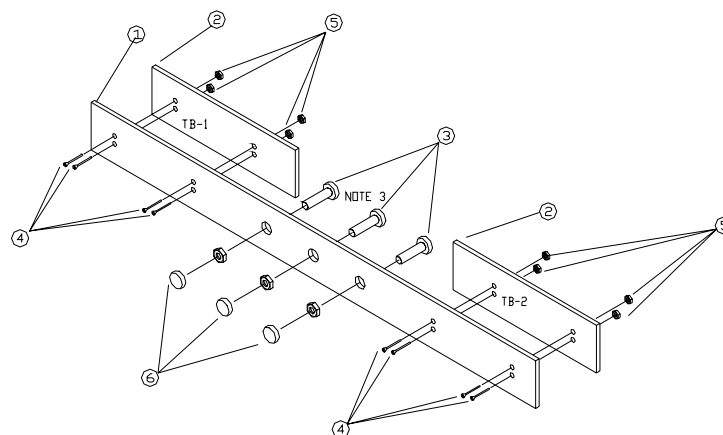


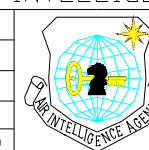
FIG. 4

- NOTES
1. USE Belden 8451 (L1 615) FOR ALL WIRING.  
SOLDER CONNECTION TO T-PAD AND USE TERMINAL LUGS (L1 1324) ON TERMINAL BOARD CUT AND STOW DRAIN WIRES.
  2. SEE T-PAD LABELING TABLE FOR T-PAD REQUIRED AND PANEL LABELING
  3. CUT SHAFT LENGTH TO PROVIDE 1/8 INCH SPACING FROM KNOB TO ID STRIP SURFACE.

NO.	DESCRIPTION	L. I.	QTY
1	BLANK PANEL	492	1EA
2	19 X 1 3/4 X 1/8	380	2EA
3	T-PADS	82	3EA
4	6-32 SCREW FLT HD	13	8EA
5	6-32 NUT	96	8EA
6	KNOB	131	3EA
7	ID STRIP	796	6EA
NOTE 1	TERMINAL LUG	1324	24EA
NOTE 1	CABLE Belden 8451	615	10FT

# U.S. AIR FORCE AIR INTELLIGENCE AGENCY

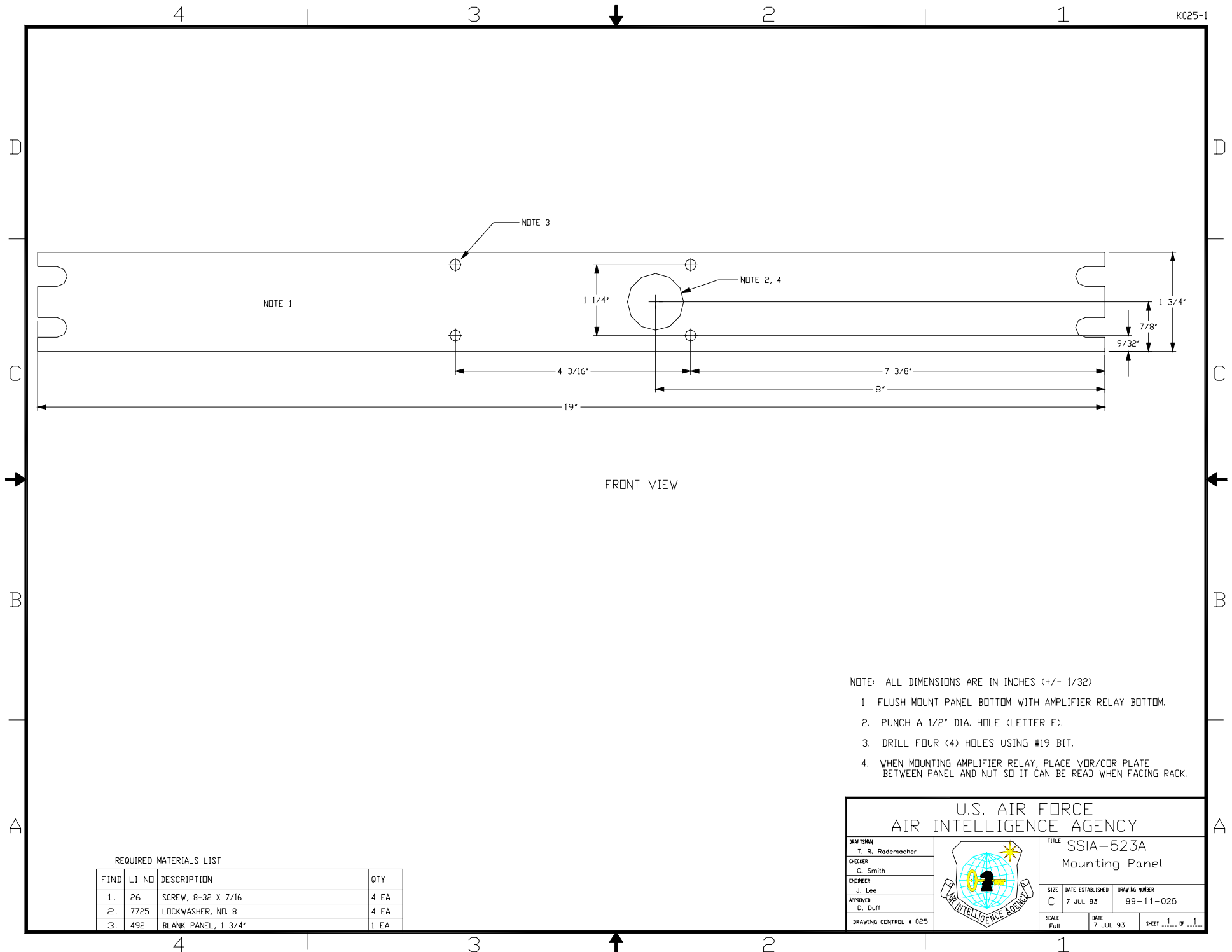
DRAFTSMAN  
Meshew  
CHECKER  
E. Moorman  
ENGINEER  
P. E. Scott  
APPROVER  
D. Duff  
DRAWING CONTROL # 010



TITLE  
Audio Control  
Panel

SIZE DATE ESTABLISHED DRAWING NUMBER  
C 8 JAN 97 99-11-010

SCALE FULL DATE 8 JAN 97 SHEET 1 OF 1



NOTE: ALL DIMENSIONS ARE IN INCHES (+/- 1/32)

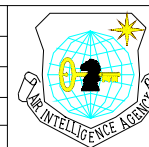
1. FLUSH MOUNT PANEL BOTTOM WITH AMPLIFIER RELAY BOTTOM.
2. PUNCH A 1/2" DIA. HOLE (LETTER F).
3. DRILL FOUR (4) HOLES USING #19 BIT.
4. WHEN MOUNTING AMPLIFIER RELAY, PLACE VOR/COR PLATE BETWEEN PANEL AND NUT SO IT CAN BE READ WHEN FACING RACK.

#### REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	26	SCREW, 8-32 X 7/16	4 EA
2.	7725	LOCKWASHER, NO. 8	4 EA
3.	492	BLANK PANEL, 1 3/4"	1 EA

#### U.S. AIR FORCE AIR INTELLIGENCE AGENCY

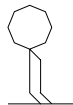
DRAFTSMAN  
T. R. Rademacher  
CHECKER  
C. Smith  
ENGINEER  
J. Lee  
APPROVED  
D. Duff  
DRAWING CONTROL # 025



TITLE  
SSIA-523A  
Mounting Panel  
SIZE  
C  
DATE ESTABLISHED  
7 JUL 93  
DRAWING NUMBER  
99-11-025  
SCALE  
Full  
DATE  
7 JUL 93  
SHEET  
1 OF 1

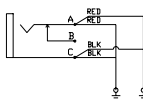
## SYMBOLS

JJ-024 JACK

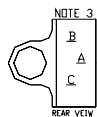


NOTE 1

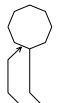
## WIRING DIAGRAM



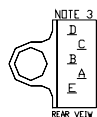
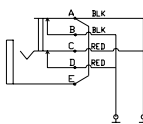
## PIN IDENTIFICATION



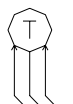
JJ-072 JACK



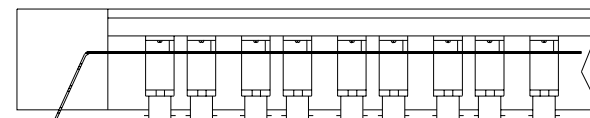
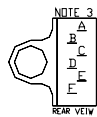
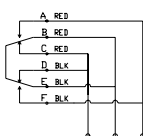
NOTE 1



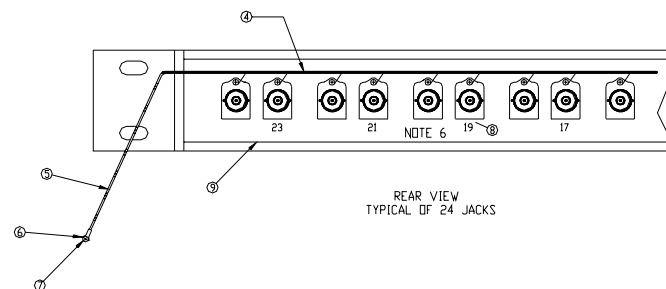
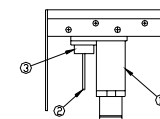
T-SWITCH



NOTE 1



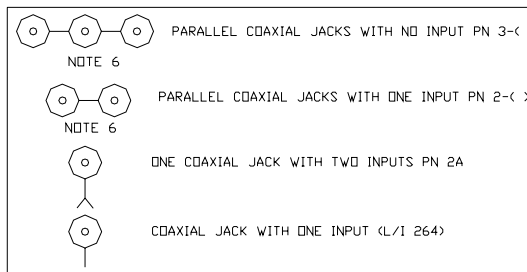
TYPICAL OF 24 JACKS

REAR VIEW  
TYPICAL OF 24 JACKS

END VIEW

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	264	Jack, Trompeter	24 EA
2.	187	Ground Lug	24 EA
3.	801	Screw, 6-32 X 3/8	24 EA
4.	7955	20 AWG Wire, Bare	As Req
5.	7642	20 AWG Wire, Stranded (Green)	24 IN
6.	372	Terminal Lug	1 EA
7.	27	Screw 10-32 X 1/2 Panhead	1 EA
8.	2200	Labels	1 BX
9.	1265	Jackstrip	1 EA
10.	608	22 AWG Wire, Stranded (Red)	As Req
11.	612	22 AWG Wire, Stranded (Black)	As Req
12.	880	Jack, Telephone, JJ-072	23 EA
	1213	Jack, Telephone, JJ-024	23 EA
	283	PN 3A-50 Parallel Network	As Req
	279	PN2 Parallel Network	As Req
	280	PN2A Parallel Network	As Req
	282	PN2A-50 Parallel Network	As Req
	284	PN 3-50 Parallel Network	As Req
	281	PN 3-75 Parallel Network	As Req
	285	PN 3-93 Parallel Network	As Req



## NOTES

1. COMPARE SYMBOLS ON 02 SERIES DRAWING TO DETERMINE WHICH WIRING DIAGRAM TO USE.
2. LEFT HAND ARROW ON T-SWITCH IS NORMALLY CLOSED. RIGHT HAND ARROW IS NORMALLY OPEN.
3. CONNECTION PINS MAY VARY IN PLACEMENT AND MUST BE VERIFIED AGAINST WIRING DIAGRAM.
4. TO ACCESS TOP OF JACKSTRIP, REMOVE TOP COVER.
5. PULL BARE GROUND (L/I 7955) THROUGH EACH GROUND LUG AND SOLDER. WRAP STRANDED CABLE (L/I 7642) AROUND FIRST LUG AND SOLDER. ATTACH OTHER END OF L/I 7642 TO NEAREST HOLE IN RACK VERTICAL MOUNTING ANGLE. SCRAPE PAINT FROM AROUND HOLE PRIOR TO ATTACHING. (USE L/I 27).
5. VIEWED FROM THE REAR, LABEL ODD NUMBERED JACKS GOING FROM RIGHT TO LEFT (EXAMPLE 1-3-5 ETC. USE L/I 2200).
6. 02 SERIES DRAWING WILL DETAIL PARALLEL NETWORK.

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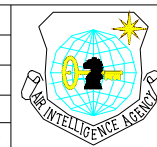
DRAFTSMAN  
F. W. Wood

CHECKER  
R. S. Golus

ENGINEER  
F. W. Wood

APPROVED  
D. Duff

DRAWING CONTROL # 044



TITLE  
Logic Symbols  
and Pin Identification

SIZE  
C

DATE ESTABLISHED  
14 DEC 74

DRAWING NUMBER  
99-11-044

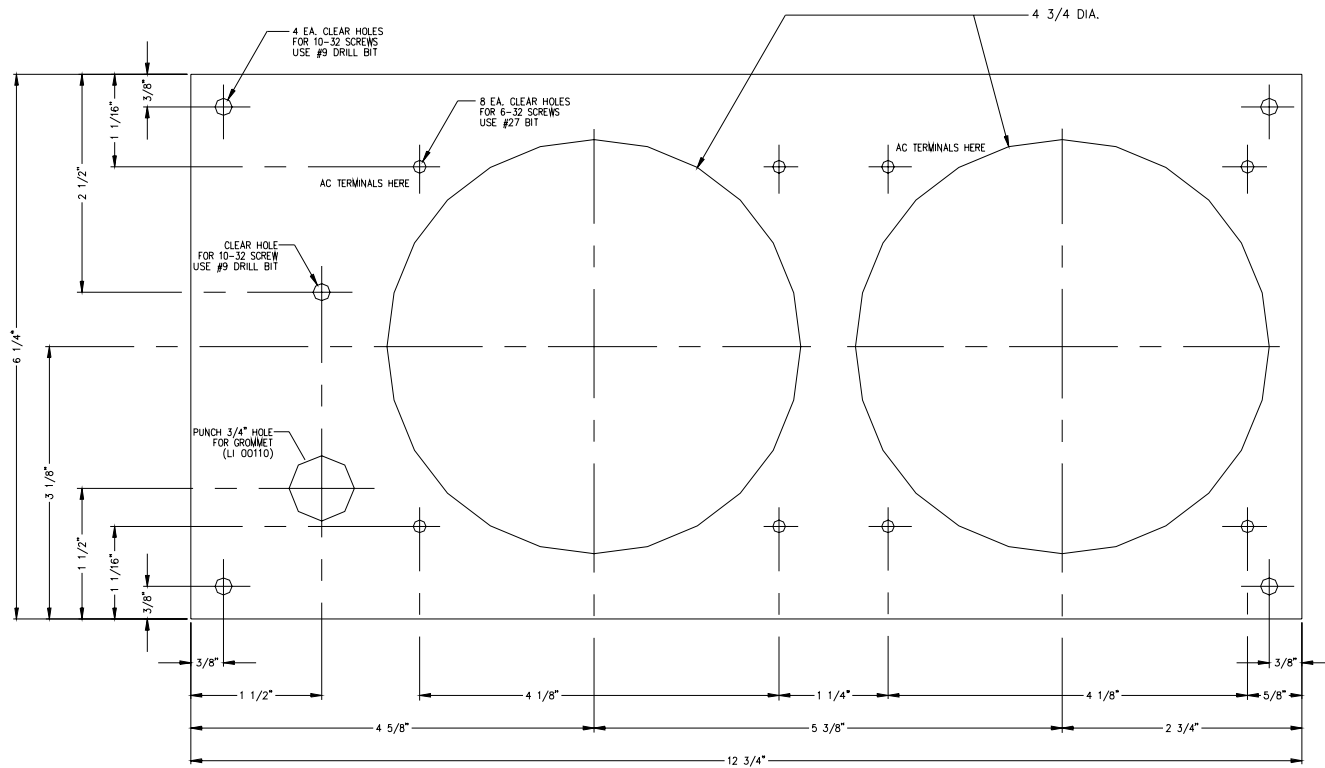
SCALE  
Full

DATE  
27 Mar 97

SHEET 1 OF 1

ADDED SHEET 3 CORRECTED RML SHEET 2  
CHANGED DIAMETER OF LARGE HOLE

15AUG86  
29JUN90  
DEB  
DDG



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HURT  
CHECKER  
D. J. MOORE  
ENGINEER  
D. D. GRIFFITH  
APPROVED  
J. Davis  
DRAWING CONTROL # 159

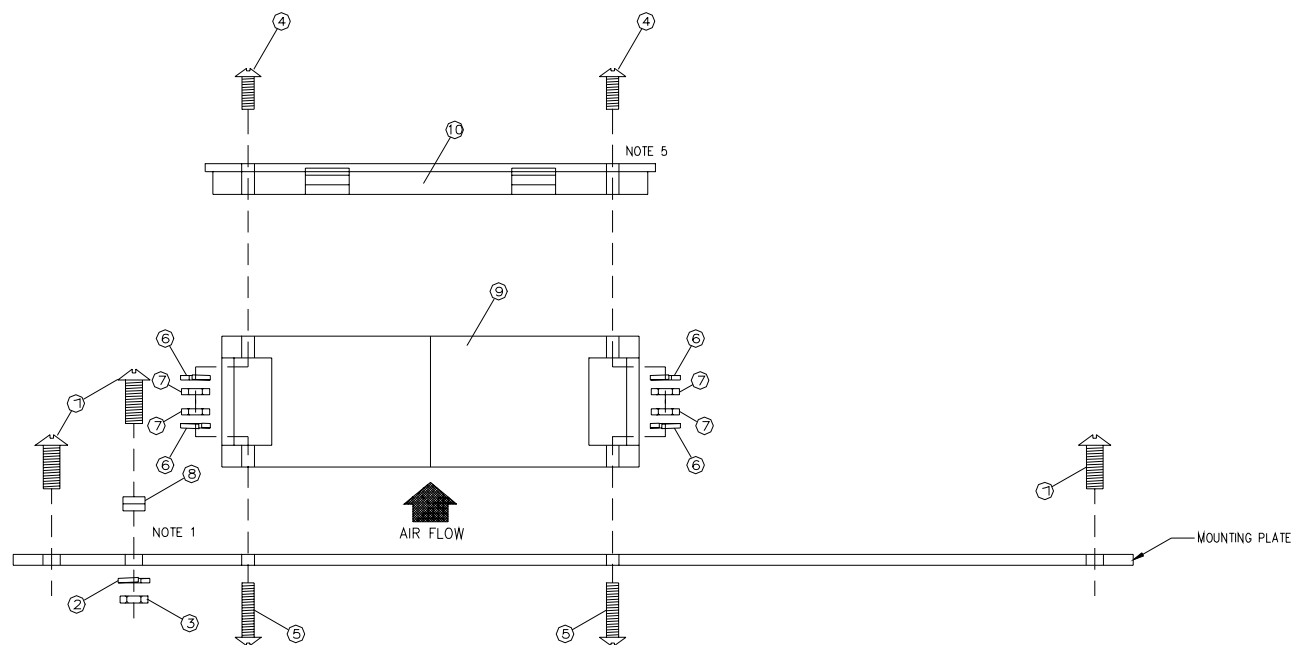


TITLE  
EXHAUST FAN  
MOUNTING PLATE  
(FOR CY-597 RACKS)

SIZE DATE ESTABLISHED DRAWING NUMBER  
C 20 FEB 75 99-11-159

SCALE Full DATE 29 JUN 90 SHEET 1 OF 3

CHANGED METHOD OF MOUNTING FAN 20MAY82 RDS



## NOTES

(ALL DIMENSIONS IN INCHES, +/- 1/32)

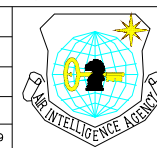
1. TWO FANS ARE TO BE INSTALLED. CUT TEN INCHES OFF THE POWER CORD (LI 00631), THEN CUT A HOLE IN THE PORT SCREEN FOR THE POWER CORD TO PASS THROUGH. FEED THE POWER CORD UP THROUGH THE PORT SCREEN AND RUBBER GROMMET (LI 00110) AND SECURE IT WITH A TY-RAP (LI 00156) TO THE TIE ANCHOR (LI00149). SOLDER THE BLACK AND WHITE LEADS TO THE MUFFIN FAN TERMINALS. USING A TERMINAL LUG (LI 02081), ATTACH THE GREEN WIRE TO A MOUNTING SCREW ON THE FAN. SHRINK TUBING WILL BE USED ON ALL AC TERMINALS.
2. CONNECT FAN-B TERMINALS TO FAN-A TERMINALS WITH THE BLACK AND WHITE LEADS OF THE TEN INCH SECTION OF THE POWER CORD. CUT GREEN WIRE BACK AS FAR AS POSSIBLE ON EACH END. CUT SHRINK TUBING LONG ENOUGH TO COVER TERMINALS AND EXPOSED GREEN WIRE.
3. THIS ENTIRE ASSEMBLY INCLUDING MUFFIN FAN (LI 03001) AND GRILLE ASSEMBLY WILL BE ASSEMBLED IN PREFAB SHOP.
4. THIS MUFFIN FAN ASSEMBLY WILL REPLACE A COVER PLATE OR ON UNUSED TOP PORT OF A CY-597 RACK. THE PORT SCREEN SHOULD REMAIN IN PLACE.
5. USE FAN AS A TEMPLATE FOR DRILLING MOUNTING HOLES IN GRILLE.

## PREFAB MATERIALS REQUIRED FOR TWO EXHAUST FANS

ITEM NO.	DESCRIPTION	LI NO.	QUANTITY
1	10-32 x 1/2" SCREW	00027	5 EA.
2	#10 LOCK WASHER	00103	1 EA.
3	10-32 NUT	00094	3 EA.
4	6-32 x 3/8" SCREW	00801	8 EA.
5	6-32 x 5/8" SCREW	00940	8 EA.
6	#6 LOCK WASHER	00090	16 EA.
7	6-32 NUT	00096	16 EA.
8	BUCKLE TIE ANCHOR	00149	1 EA.
9	MUFFIN FAN	03001	2 EA.
10	GRILLE	03000	2 EA.
	TY-RAP	00156	1 EA.
	POWER CORD	00631	1 EA.
	TERMINAL LUG	02081	1 EA.
	ALUMINUM .063 INCH THICK	01792	AS REQ.
	1/2" I.D. HEAT SHRINK TUBING	00416	5 EA.
	RUBBER GROMMET	00110	1 EA.

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HURT  
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D. J. MOORE  
ENGINEER  
D. D. GRIFFITH  
APPROVED  
J. Davis  
DRAWING CONTROL # 159

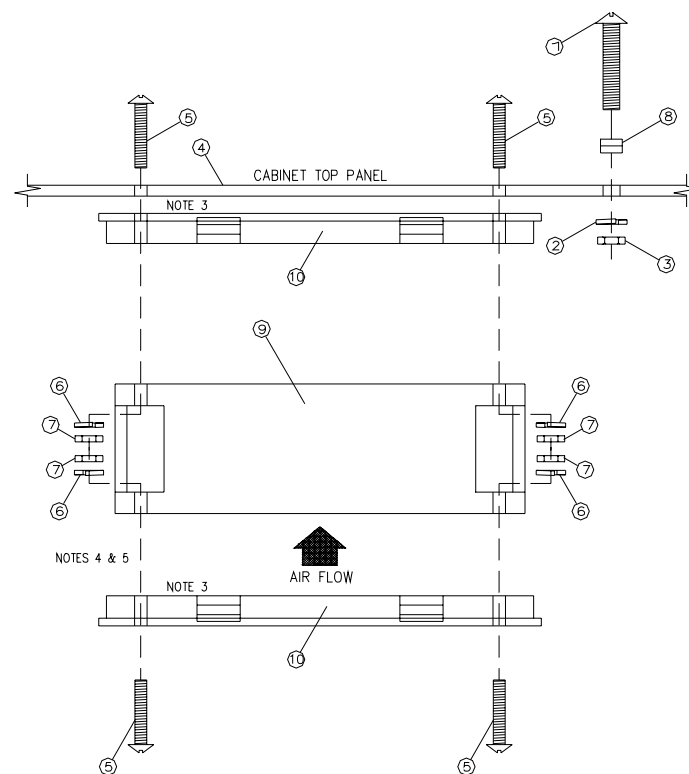
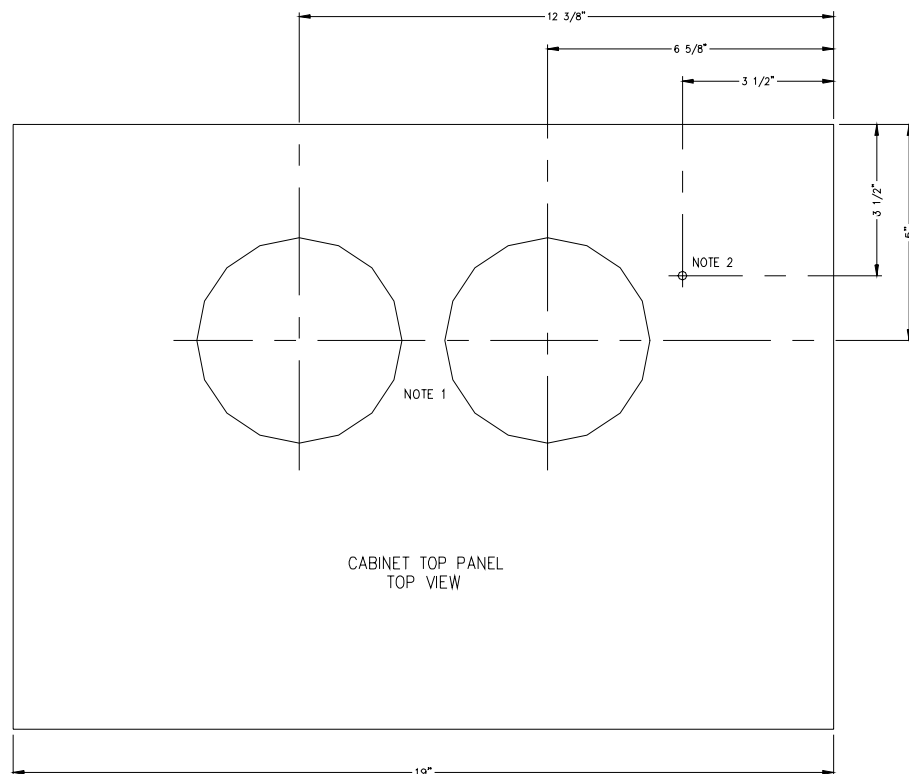


TITLE  
EXHAUST FAN  
MOUNTING PROCEDURE  
(FOR CY-597 RACK)

SIZE DATE ESTABLISHED DRAWING NUMBER  
C 20 FEB 75 99-11-159

SCALE FULL DATE 29 JUN 90 SHEET 2 OF 3

K159-3



CHANGED FIND NO. 5 LINE ITEM NO.  
CHANGED HOLE DIAMETER TO 4 3/4"  
MOVED AC TERMINAL TO RIGHT SIDE  
RENUMBERED NOTES

29APR88  
29JUN90  
29JUN90

DEB  
DDG  
DDG

## REQUIRED MATERIALS LIST

ITEM NO.	DESCRIPTION	LI. NO.	QUANTITY
1	10-32 x 1" SCREW	01778	1 EA.
2	#10 LOCK WASHER	00103	1 EA.
3	10-32 NUT	00094	1 EA.
4	RACK TOP	NOTE 6	1 EA.
5	6-32 x 3/4" SCREW	8085	16 EA.
6	#6 LOCK WASHER	00090	16 EA.
7	6-32 NUT	00096	16 EA.
8	BUCKLE TIE ANCHOR	00149	1 EA.
9	MUFFIN FAN	03001	2 EA.
10	GRILLE	03000	4 EA.
	TY-RAP	00156	1 EA.
	POWER CORD	00631	1 EA.
	TERMINAL LUG	02081	1 EA.
	1/2" I.D. HEAT SHRINK TUBING	00416	5 EA.

## NOTES

(ALL DIMENSIONS IN INCHES, +/- 1/32)

- HOLES FOR AIR FLOW ARE 4 3/4" DIAMETER. USE MUFFIN FAN AS A TEMPLATE FOR DRILLING MOUNTING HOLES IN CABINET TOP PANEL. MOUNT FANS SO THAT THE OF FANS PARALLEL TO REAR EDGE OF PANEL. USE #27 DRILL BIT. AC TERMINALS ARE TOWARD THE RIGHT REAR CORNER OF PANEL. WITH REAR SIDE.
- CLEAR HOLE FOR ATTACHING BUCKLE TIE ANCHOR. USE #9 DRILL BIT.
- USE FAN AS A TEMPLATE FOR DRILLING MOUNTING HOLES IN GRILLE, IF REQUIRED.
- TWO FANS ARE TO BE INSTALLED. CUT TEN INCHES OFF THE POWER CORD (LI 00631). SOLDER THE BLACK AND WHITE LEADS TO THE MUFFIN FAN TERMINALS. USING A TERMINAL LUG (LI 02081), ATTACH THE GREEN WIRE TO A MOUNTING SCREW ON THE FAN. SHRINK TUBING WILL BE USED ON ALL AC TERMINALS. SECURE CABLE USING TY-RAP (LI 00156) TO THE ANCHOR (LI 00149) AND FASTEN TO CABINET TOP PANEL USING 10-32 SCREW (LI 01778), WASHER (LI 00103) AND NUT (00094).
- CONNECT FAN-B TERMINALS TO FAN-A TERMINALS WITH THE BLACK AND WHITE LEADS OF THE TEN INCH SECTION OF THE POWER CORD. CUT GREEN WIRE BACK AS FAR AS POSSIBLE ON EACH END. CUT SHRINK TUBING LONG ENOUGH TO COVER TERMINALS AND EXPOSED GREEN WIRE.
- FOR EMCOR 10 SERIES RACKS, USE (LI 3041) FOR 19" WIDE PANELS. OTHER TOPS CAN BE SPECIFIED IF REQUIRED.

# U.S. AIR FORCE AIR INTELLIGENCE AGENCY

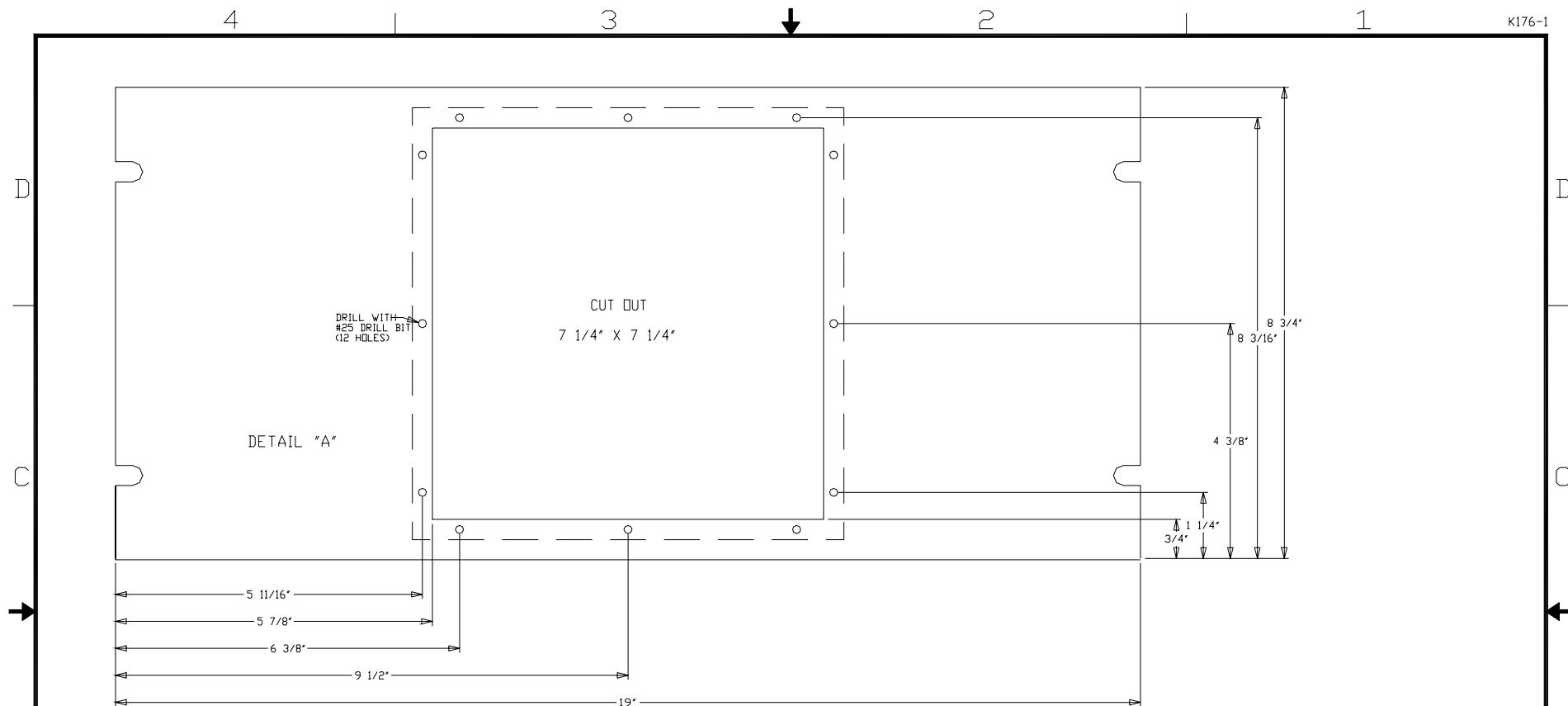
DRAFTSMAN  
HURST  
CHECKER  
D. J. MOORE  
ENGINEER  
D. D. GRIFFITH  
APPROVER  
J. Davis  
DRAWING CONTROL # 159



TITLE  
EXHAUST FAN  
MOUNTING PROCEDURE  
SOLID ONE PIECE RACK  
TOPS  
SIZE  
C  
DATE ESTABLISHED  
20 FEB 75  
DRAWING NUMBER  
99-11-159  
SCALE  
Full  
DATE  
29 JUN 90  
SHEET  
3 OF 3



K176-1



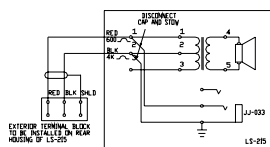
NOTES: ALL DIMENSIONS ARE IN INCHES (+/- 1/32)

#### FABRICATION INSTRUCTIONS

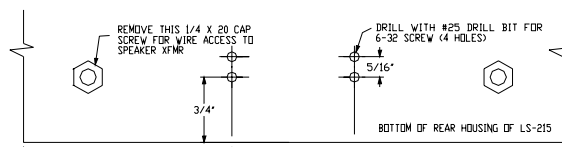
1. CUT OUT A 7 1/4 IN. SQ. HOLE CENTERED ON A 8 3/4 IN. BLANK PANEL AS SPECIFIED IN DETAIL A.
2. DRILL 12 EACH MOUNTING HOLES USING A #25 DRILL BIT AS SPECIFIED IN DETAIL A.

#### INSTALLATION INSTRUCTIONS

1. DISASSEMBLE LS-215 SPEAKER BY REMOVING THE 12 OUTSIDE #6-32 SCREWS FROM THE FACE OF THE SPEAKER HOUSING.
2. REMOVE CAP AND STOW THE TWO WIRES ATTACHED TO THE INTERIOR TERMINAL BOARD (TERMINALS 1 AND 2) SERVICING THE J1-033 SPEAKER JACK AS SHOWN IN DETAIL B.
3. ATTACH A SHORT PIECE OF BELDEN 8451 TO THE 600 OHM TERMINALS 1 AND 2 (RED TO 1 AND BLACK TO 2) USING SPADE LUGS. DO NOT CONNECT THE SHIELD TO THIS BLOCK.
4. DRILL 4 HOLES ON THE BOTTOM REAR OF THE SPEAKER HOUSING TO MOUNT A TERMINAL BLOCK AS SPECIFIED IN DETAIL C USING A #25 DRILL BIT.
5. MOUNT THE L/N 01294 TERMINAL BLOCK USING L/N 00047 SCREWS, 00090 LOCK WASHERS, AND 00096 NUTS.
6. REMOVE THE LOWER BOTTOM LEFT 1/4 X 20 CAP SCREW FROM THE SPEAKER HOUSING AND RUN THE BELDEN 8451 THRU THIS HOLE AND ATTACH IT TO THE TOP SCREWS ON THE MOUNTED TERMINAL BLOCK USING L/N 01324 SPADE LUGS. WIRE THE RED WIRE TO THE FIRST TERMINAL ON THE LEFT, THE BLACK WIRE TO THE SECOND AND THE SHIELD TO THE THIRD LEAVING THE FOURTH TERMINAL BLANK.
7. REASSEMBLE THE SPEAKER ENCLOSURE ON THE FABRICATED 8 3/4 IN. PANEL MOUNTING THE SPEAKER GRILL AND ITS MESHED SCREEN ON THE FRONT SIDE OF THE PANEL AND THE HOUSING ON THE BACK SIDE OF THE PANEL USING TWELVE 6/32 SCREWS REMOVED IN NOTE 1.
8. ATTACH THE EXTERNAL CABLE AND ITS SHIELD TO THE INSTALLED TERMINAL BLOCK USING TERMINAL LUGS WITH THE SAME COLOR CODE SEQUENCE AS NOTE 6.



DETAIL "B"



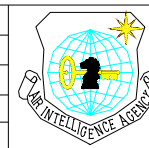
DETAIL "C"

#### REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	00509	PANEL, BLANK, ALUM. 8 3/4\" X 19\" X 1/8\"	1 EA
2.	01294	TERMINAL BOARD, 4 DOUBLE CONTACTS	1 EA
3.	00047	SCREW, 6-32 X 1/2\" PAN HEAD	4 EA
4.	00096	NUT, HEX, 6-32	4 EA
5.	00090	WASHER, LOCK, FOR #6 SCREW	4 EA
6.	00615	CABLE, BELDEN 8451	2 FT
7.	01324	LUG, SPADE 22-16 AWG	5 EA

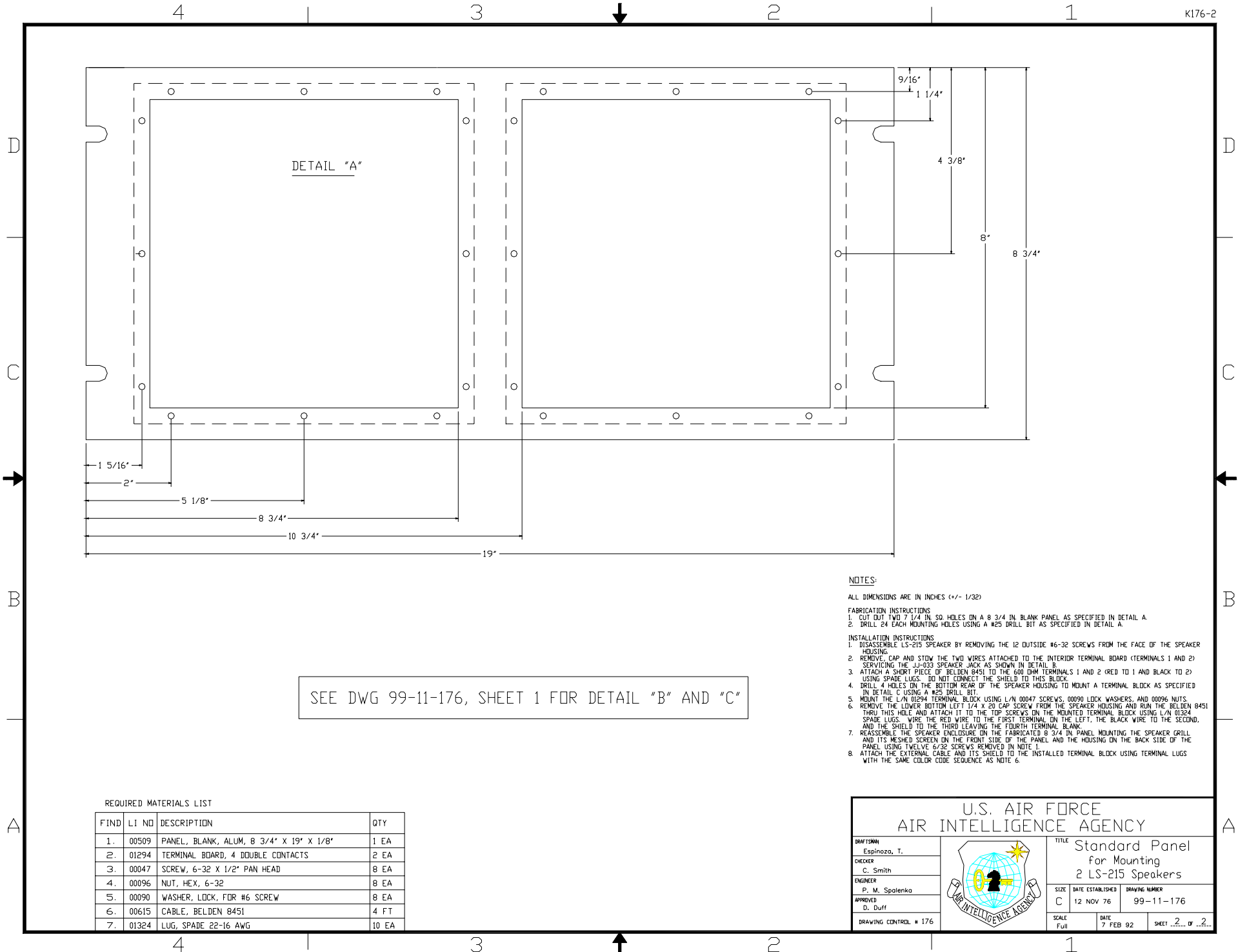
### U.S. AIR FORCE AIR INTELLIGENCE AGENCY

DRAWNMAN Espinoza, T.
CHECKER C. Smith
ENGINEER T. Rademacher
APPROVED D. Duff
DRAWING CONTROL # 176



TITLE Standard LS-215 Loudspeaker Monitor Panel and Wiring		
SIZE C	DATE ESTABLISHED 17 MAR 71	DRAWING NUMBER 99-11-176
SCALE Full	DATE 7 FEB 92	SHEET 1 OF 2

K176-2



## NOTES:

ALL DIMENSIONS ARE IN INCHES (+/- 1/32")

## FABRICATION INSTRUCTIONS

1. CUT OUT TWO 7 1/4 IN SQ. HOLES ON A 8 3/4 IN. BLANK PANEL AS SPECIFIED IN DETAIL A.
2. DRILL 24 EACH MOUNTING HOLES USING A #25 DRILL BIT AS SPECIFIED IN DETAIL A.

## INSTALLATION INSTRUCTIONS

1. DISASSEMBLE LS-215 SPEAKER BY REMOVING THE 12 OUTSIDE #6-32 SCREWS FROM THE FACE OF THE SPEAKER HOUSING.
2. REMOVE CAP AND STOW THE TWO WIRES ATTACHED TO THE INTERIOR TERMINAL BOARD (TERMINALS 1 AND 2) SERVICING THE JJ-033 SPEAKER JACK AS SHOWN IN DETAIL B.
3. ATTACH A SHORT PIECE OF BELDEN 8451 TO THE 600 OHM TERMINALS 1 AND 2 (RED TO 1 AND BLACK TO 2) USING SPADE LUGS. DO NOT CONNECT THE SHIELD TO THIS BLOCK.
4. DRILL 4 HOLES ON THE BOTTOM REAR OF THE SPEAKER HOUSING TO MOUNT A TERMINAL BLOCK AS SPECIFIED IN DETAIL C USING A #25 DRILL BIT.
5. MOUNT THE L/N 01294 TERMINAL BLOCK USING L/N 00047 SCREWS, 00090 LOCK WASHERS, AND 00096 NUTS.
6. REMOVE THE LOWER BOTTOM LEFT 1/4 X 20 CAP SCREW FROM THE SPEAKER HOUSING AND RUN THE BELDEN 8451 THRU THIS HOLE AND ATTACH IT TO THE TOP SCREWS ON THE MOUNTED TERMINAL BLOCK USING L/N 01324 SPADE LUGS. WIRE THE RED WIRE TO THE FIRST TERMINAL ON THE LEFT, THE BLACK WIRE TO THE SECOND, AND THE SHIELD TO THE THIRD LEAVING THE FOURTH TERMINAL BLANK.
7. REASSEMBLE THE SPEAKER ENCLOSURE ON THE FABRICATED 8 3/4 IN. PANEL MOUNTING THE SPEAKER GRILL AND ITS MESHED SCREEN ON THE FRONT SIDE OF THE PANEL AND THE HOUSING ON THE BACK SIDE OF THE PANEL USING TWELVE 6/32 SCREWS REMOVED IN NOTE 1.
8. ATTACH THE EXTERNAL CABLE AND ITS SHIELD TO THE INSTALLED TERMINAL BLOCK USING TERMINAL LUGS WITH THE SAME COLOR CODE SEQUENCE AS NOTE 6.

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	00509	PANEL, BLANK, ALUM, 8 3/4" X 19" X 1/8"	1 EA
2.	01294	TERMINAL BOARD, 4 DOUBLE CONTACTS	2 EA
3.	00047	SCREW, 6-32 X 1/2" PAN HEAD	8 EA
4.	00096	NUT, HEX, 6-32	8 EA
5.	00090	WASHER, LOCK, FOR #6 SCREW	8 EA
6.	00615	CABLE, BELDEN 8451	4 FT
7.	01324	LUG, SPADE 22-16 AWG	10 EA

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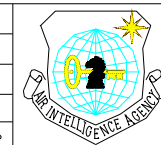
DRAFTSMAN  
Espinoza, T.

CHECKER  
C. Smith

ENGINEER  
P. M. Spalenka

APPROVED  
D. Duff

DRAWING CONTROL # 176



TITLE  
Standard Panel  
for Mounting  
2 LS-215 Speakers

SIZE C	DATE ESTABLISHED 12 NOV 76	DRAWING NUMBER 99-11-176
SCALE Full	DATE 7 FEB 92	SHEET 2 OF 2

FIG A FRONT VIEW OF INTERFACE PANEL

NOTE 5

DELETE NOTE 4 AND RENUMBER NOTES, CHANGE RML, REDRAW TO CADD, DELETE SHT 1 AND 3. 21 MAY 92 CCS  
MOVED FROM CATEGORY 14 8 JAN 97 TMH

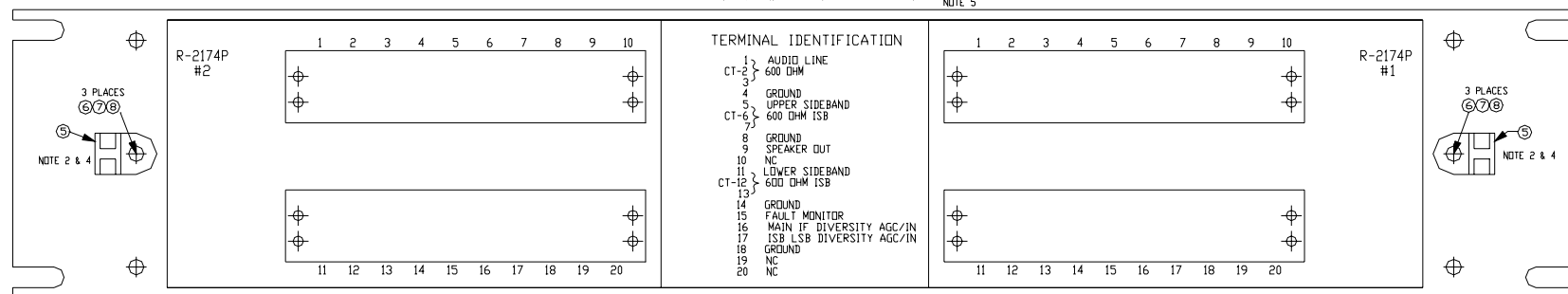
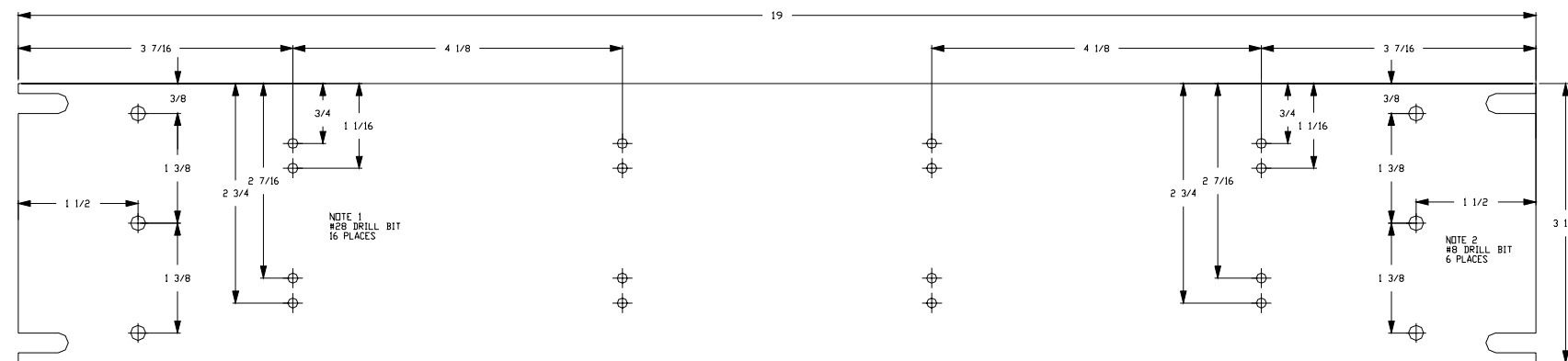
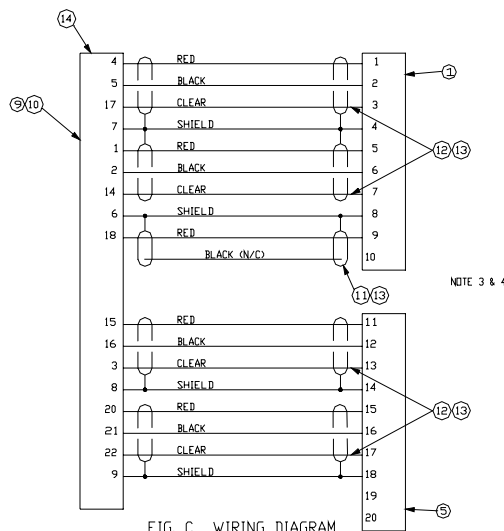


FIG B HOLE LOCATION FRONT VIEW OF PANEL



REQUIRED MATERIAL LIST

FIND NO.	LI NO.	DESCRIPTION	QTY	REMARKS
1.	1067	TERMINAL BOARDS	4 EA	
2.	8085	6-32 X 3/4 SCREW	16 EA	
3.	0090	#6 LOCK WASHER	16 EA	
4.	8033	6-32 HEX NUT	16 EA	
5.	0149	TY RAP ANCHOR	6 EA	
6.	0027	10-32 X 1/2 SCREW	10 EA	
7.	8103	#10 LOCK WASHER	6 EA	
8.	0094	10-32 HEX NUT	6 EA	
9.	1064	CONN DBM2SP	2 EA	
10.	1065	CONN BACKSHELL 90 DEGREE	2 EA	
11.	0615	CABLE , BELDEN 8451	6 FT	
12.	0894	CABLE , BELDEN 8771	24 FT	
13.	1324	TERMINAL LUGS, 20 AWG	34 EA	
14.	1070	LATCH ASSEMBLY	2 EA	
15.	0510	3-1/2 X 19 PANEL	1 EA	NOTE 5
	0156	TY-RAP	AS REQ	



NOTES: ALL DIMENSIONS ARE IN INCHES. (+ 1/32 INCH)

1. DRILL HOLES FOR MOUNTING TERMINAL BOARDS AND METHPO PLATE USING #26 DRILL BIT. PREDRILL METHPO IN INDICATED HOLES. USE 6-32 SCREWS, LOCK WASHERS, AND HEX NUTS.
2. USE #8 BIT TO DRILL HOLE FOR TY-RAP ANCHOR. MOUNT AS SHOWN WITH 10-32 SCREWS, LOCK WASHERS, AND HEX NUTS.
3. TERMINATE CABLES AT ONE END WITH DBM2SP CONNECTOR AND BACKSHELL. TERMINATE AT TB WITH TERMINAL LUGS SO THAT CABLE MEASURES 24 INCHES FROM TY-RAP ANCHOR TO CONNECTOR BACKSHELL. CONNECTOR TERMINATES AT J3 OF R-2174P.
4. CABLES TO R-2174P #1 WILL EXIT BACKSHELL AT PIN 1 END OF CONNECTOR. CABLES TO R-2174P #2 WILL EXIT AT PIN 25 END OF CONNECTOR.
5. METHPO IDENTIFICATION PLATE IS SCALE SIZE AS SHOWN. BLACK LETTERS ON SILVER. 1 EA REQUIRED.


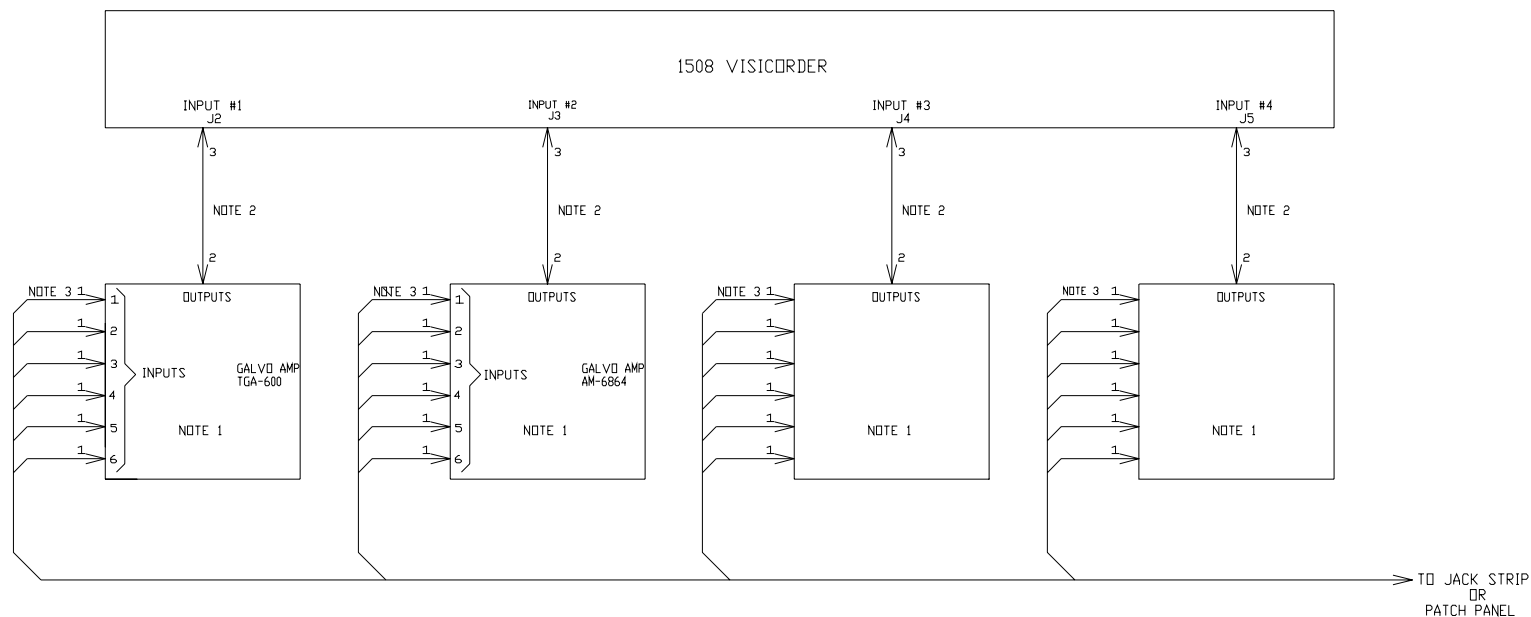
Brewer		U.S. AIR FORCE AIR INTELLIGENCE AGENCY	
DRAFTSMAN Brewer	CHECKER H. L. Decker		
ENGINEER R. D. Suttles	APPROVED D. Duff		
DRAWING CONTROL # 316		TITLE: R-2174 Receiver Audio Interface Panel Construction SIZE: C DATE ESTABLISHED: 17 MAR 80 DRAWING NUMBER: 99-11-316 SCALE: Full DATE: 8 JAN 97 SHEET: 1 OF 1	

FIGURE "A"



XLR-3-11C (L100315)  
GALVO AMP INPUT

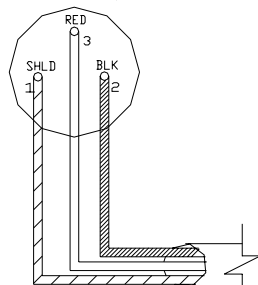


FIGURE "B"

M83723-23R2027N (L101031)  
BACKSHELL (L100710)

TO GALVO AMP OUTPUT

BELDEN 8451  
(L1 00615)

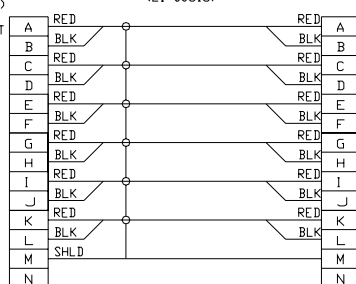


FIGURE "C"

## NOTES:

1. THE 1508 VISICORDER MAY BE USED WITH EITHER THE TAG-600 GALVO AMP OR THE AM-6864 GALVO AMP (24 INPUTS MAX). CABLES AND CONNECTION DETAILS ARE THE SAME FOR BOTH UNITS. THE NUMBER OF AMPLIFIERS AND MATERIAL ARE DETERMINED BY ASSOCIATED POSITION REQUIREMENTS.
2. SEE FIG C FOR CABLE FABRICATION DETAILS. INSTALLATION SCHEME WILL INDICATE THE NUMBER OF CABLES NEEDED.
3. SEE FIG B FOR CONNECTOR FABRICATION DETAILS OF GALVO AMP INPUTS. GALVO AMP INPUT CONNECTIONS ARE WIRED ON SITE. MATERIALS PROVIDED BY POSITION RML.

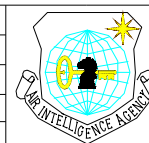
## LEGEND

→ CABLE WITH CONNECTOR

NO.	CABLE P/N	LI NO.	CONNECTOR P/N	LI NO.	BACKSHELL P/N	LI NO.
1.	BELDEN 8451	00615	XLR-3-11C	00315		
2.	BELDEN 8451	00615	M83723-23R2027N	01031	M83723-355-20	00710
3.	BELDEN 8451	00615	M83723-24R2027N	01026	M83723-355-20	00710

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DRAFTSMAN  
Brewer  
CHECKER  
C. Smith  
ENGINEER  
D. C. McCallum  
APPROVED  
D. Duff  
DRAWING CONTROL # 187

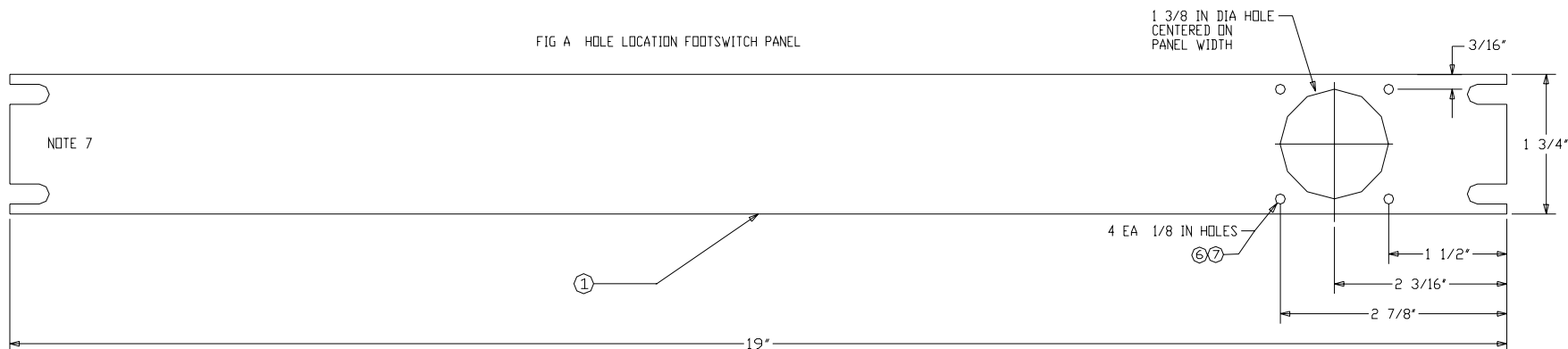


TITLE  
1508 Visicorder  
to Galvo Amp Wiring

SIZE  
C  
DATE ESTABLISHED  
15 JUN 71  
DRAWING NUMBER  
99-12-187

SCALE  
Full  
DATE  
20 FEB 92  
SHEET 1 OF 1

FIG A HOLE LOCATION FOOTSWITCH PANEL



NOTE 7

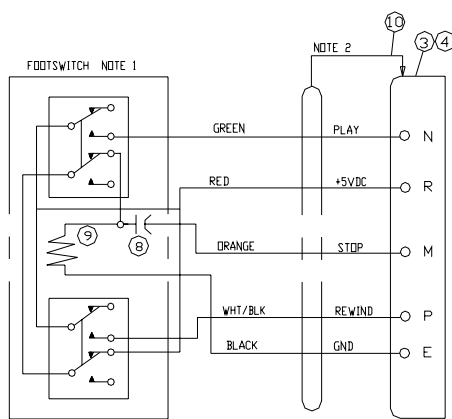
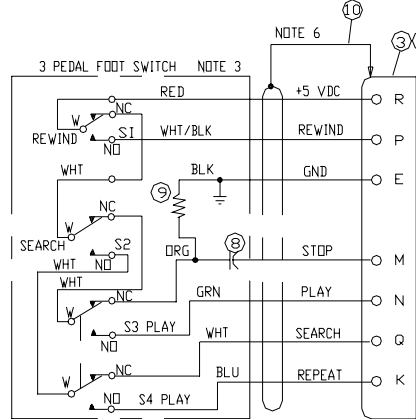
FIG B. TELEX CONVENTIONAL FOOT SWITCH P/N 91X2611 WIRING  
CAN ONLY BE USED FOR PLAYBACK

FIG C. LINE MASTER 3 PEDAL FOOTSWITCH WIRING

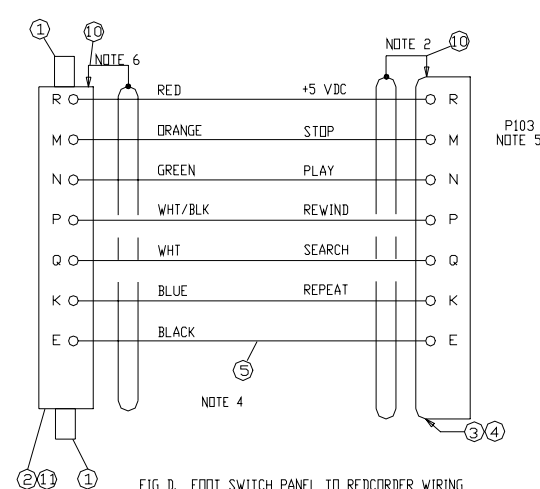


FIG D. FOOT SWITCH PANEL TO REDRECORDER WIRING

NOTES: (ALL DIMENSIONS ARE IN INCHES ±1/32)

- FOOTSWITCH P/N 91X2611 (FIG B) IS NORMALLY USED WITH THE PT-6 AND GS-80 RECORDERS AND IT REQUIRES A FOUR FOOT CABLE LENGTH.
- ATTACH CABLE SHIELD TO CONNECTOR BACKSHELL WITH TERMINAL LUG (LT 01324).
- THE LINE MASTER FOOTSWITCH (FIG C) IS WIRED BY THE MANUFACTURER AND MAY REQUIRE THE CABLE TO BE SHORTENED DURING INSTALLATION ON SITE.
- LENGTH OF CABLE IN FIG D WILL BE DETERMINED BY THE DISTANCE BETWEEN RECORDER AND FOOTSWITCH PANEL.
- CONNECTOR P/N M83723-24R28N (LT 01877) WILL CONNECT TO THE RECORDERS AT P103.
- ATTACH CABLE SHIELD TO CONNECTOR MOUNTING BOLT WITH TERMINAL LUG (LT 01324).
- IF SECOND CONNECTOR IS REQUIRED, MOUNT AT THIS END USING SAME DIMENSIONS.

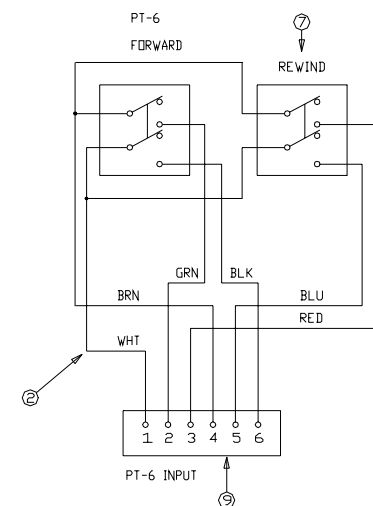
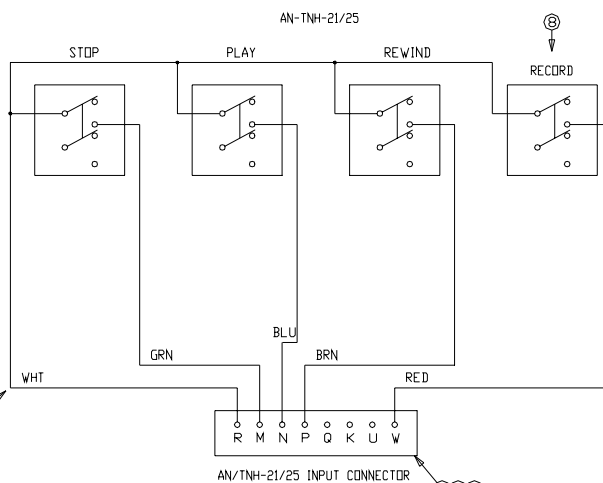
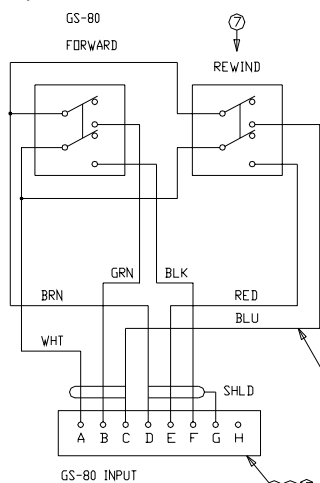
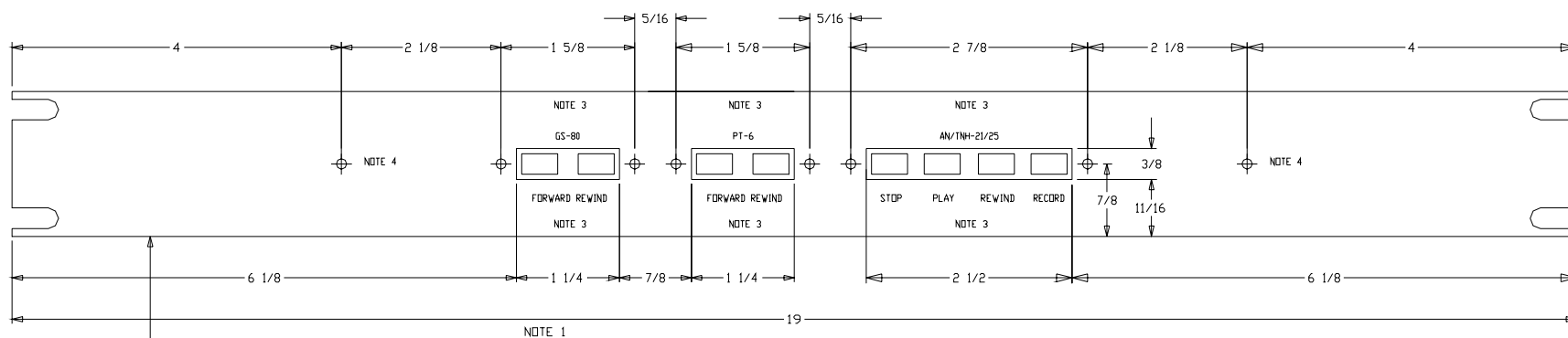
FIND NO	RML DESCRIPTION	LT NO	B	C	D	QUANTITY
1	1 3/4 X 19 IN BLANK PNL	00492				1 EA
2	BULKHEAD CONN	01189				1 EA
3	M83723-19R2428N CONN PLUG	01187	1 EA	1 EA	1 EA	1 EA
4	M83723-24R2428N CONN BACKSHELL	00770	1 EA	1 EA	1 EA	1 EA
5	M53417-24N ALPHA 3337ALPHA 3337	07006	AS REQ	AS REQ	AS REQ	AS REQ
6	8 COND CABLE W/ SHIELD	00040				4 EA
7	SCREW 4-40 X 3/8	00095				4 EA
8	NUT HEX 4-40	00171	1 EA	1 EA	1 EA	1 EA
9	.05 UFD CAP	08166	1 EA	1 EA	1 EA	1 EA
10	240 OHM 1/2 WATT RESISTOR	01324	1 EA	1 EA	2 EA	2 EA
11	TERMINAL LUGS CONN BACKSHELL	00761				1 EA

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AIR INTELLIGENCE AGENCY

DRAFTSMAN  
Espinoza, T.  
CHECKER  
D. W. Sosa  
ENGINEER  
D. L. Stotler  
APPROVER  
D. Duff  
DRAWING CONTROL # 280



TITLE  
Footswitch Cable  
Details for TNH-25  
and AN/TNH-21 Recorders  
SIZE  
C  
DATE ESTABLISHED  
30 AUG 76  
DRAWING NUMBER  
99-12-280  
SCALE  
Full  
DATE  
3 FEB 92  
SHEET  
1 OF 1

COMBINED WITH 99-12-231 AND  
99-14-322, TOTAL SHEETS 5 9 JAN 97 TMH

## MATERIALS REQUIRED

FIND ITEM	DESCRIPTION	LINE ITEM	QTY	REMARKS
1	BLANK PANEL 1 3/4'	0492	1	NOTE 1 AND 2
2	CABLE BELDEN 8426	0563	AS REQ	
3	CONNECTOR M83723-24R2428N	1187	AS REQ	
4	BACKSHELL	0733	AS REQ	USE LI 770 FOR MS CONN.
5	CONNECTOR MS3456W20-7P	1215	AS REQ	
6	BACKSHELL	0710	AS REQ	
7	SWITCH INTERLOCK WITH LOCKOUT	1167	AS REQ	SWITCHCRAFT 5930-00-328-2267
8	SWITCH INTERLOCK WITH LOCKOUT	1168	AS REQ	SWITCHCRAFT 5930-00-346-9037
9	P-306CCT CINCH JONES PLUG	0220	AS REQ	
10	I.D. STRIP	0796	AS REQ	
11	CONTACT CEMENT	0690	AS REQ	
12	MACHINE SCREW 6-32 X 3/4	28	AS REQ	NOT SHOWN
13	NO. 6 LOCK WASHER	90	AS REQ	NOT SHOWN
14	NUT 6-32	8033	AS REQ	NOT SHOWN
15	RUBBER GROMMET	783	AS REQ	

## NOTES:

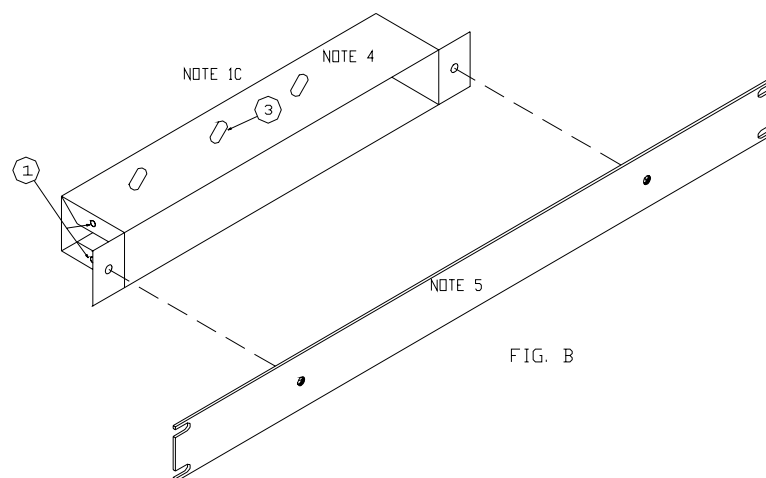
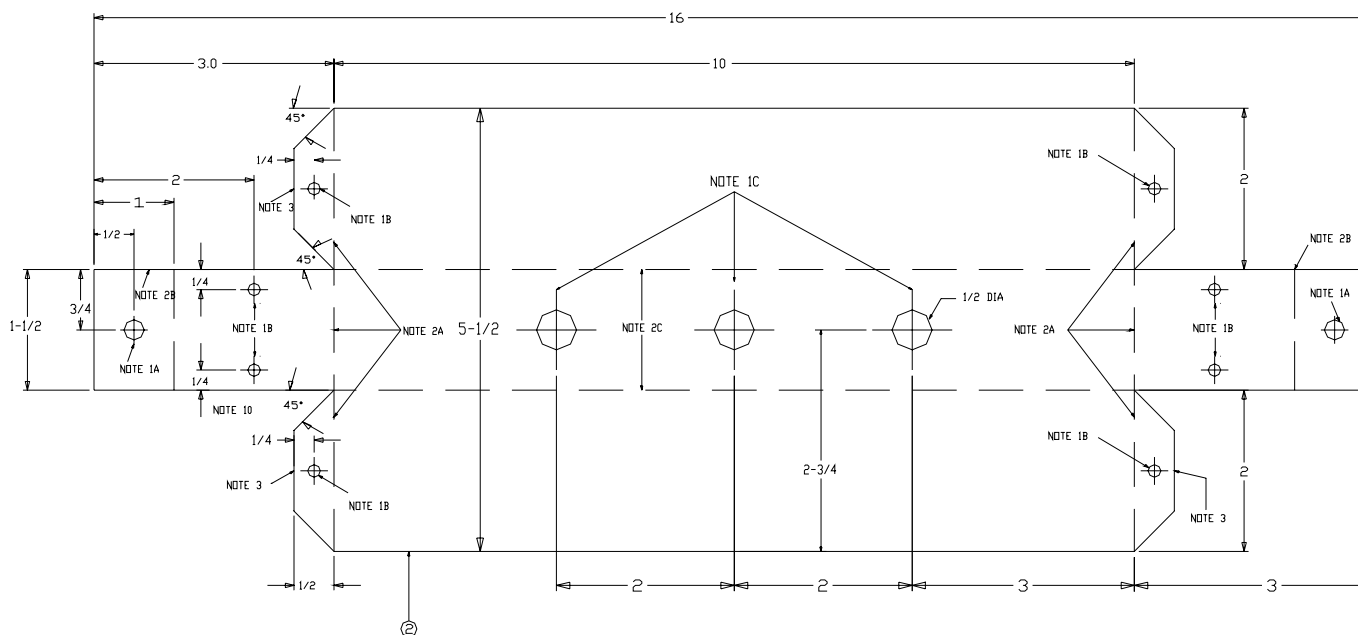
ALL DIMENSIONS IN INCHES +/- 1/32

- ANY COMBINATION OF RECORDER SWITCHES MAY BE MOUNTED ON PANEL PUNCH HOLES FOR SWITCHES
- PROJECT ENGINEER WILL DETERMINE COMBINATION OF RECORDER SWITCHES REQUIRED AND CABLE LENGTHS TO BE FABRICATED.
- CUT ID STRIPS (LI-0796) TO WIDTH OF SWITCHES GLUE (LI-690) ONE ABOVE AND BELOW SWITCHES LABEL AS INDICATED.
- DRILL ALL REQUIRED HOLES WITH A #20 DRILL BIT AND COUNTER SINK EACH HOLE. USE LI 28, 90 AND 8033 FOR MOUNTING SWITCH AND FACE PLATES.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE Remote Switches for 3 Recorders	
DRAFTSMAN C. C. Brewer	CHECKER R. S. Galus	SIZE C	DATE ESTABLISHED 14 AUG 78
ENGINEER F. W. Wood	APPROVED D. Duff	DRAWING NUMBER 99-12-294	SHEET 1 OF 5
DRAWING CONTROL # 294		SCALE Full	DATE 9 JAN 97

COMBINED WITH 99-12-231 AND  
99-14-322, TOTAL SHEETS 5 9 JAN 97 TMH

FIG. A



NOTES: \*ALL DIMENSIONS IN INCHES (+/- 1/32 INCHES).  
ANGLE TOLERANCE (+/- .5 DEGREE).

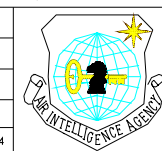
- CUT AND DRILL ROLLED STEEL (LI-705) AS SHOWN IN FIG. 1 SIZES REQUIRED:  
(A) #20 FOR MOUNTING BACK COVER TO FRONT PANEL (FIG. A FOR PLACEMENT OF HOLES)  
(B) #30 FOR BLIND RIVETS (LI-0022)  
(C) 1/2" HOLES (AS REQUIRED) FOR CABLES. ONE HOLE PER CABLE. PROJECT ENGINEER WILL DETERMINE THE NUMBER OF CABLES REQUIRED.  
(D) CUT ALL ANGLES AT 45 DEGREES.
- BEND STEEL TO FORM BACK PANEL COVER (FIG. B) REQUIRED BENDS  
(A) 90 DEGREE FIRST BEND (SEE FIG. A FOR PLACEMENT OF BENDS)  
(B) 90 DEGREE SECOND BEND (OPPOSITE OF FIRST BEND)  
(C) LAST BEND TO FORM COVER (FLAPS GO OUTSIDE)
- SECURE FLAPS TO SIDE WITH BLIND RIVETS (LI-0022) TO FORM FIG. B
- INSTALL GROMMET(S) (LI-115) (FIG. B)
- TO SECURE COVER TO FRONT PANEL SEE SHEET 1. USE SCREWS (LI-028), NUTS (LI-8033) AND LOCKWASHERS (LI-090) RUN CABLE(S) THRU HOLE BEFORE SECURING COVER OR MOUNTING CONNECTOR TO CABLE(S).

MATERIALS REQUIRED

FIND ITEM	DESCRIPTION	LINE ITEM	QTY
1	BLIND RIVET 1/8 x 1/8	0022	4 EA
2	COLD ROLLED STEEL, 22 GA. 16 x 5 1/2	0705	AS REQ
3	GROMMET	0115	AS REQ

U.S. AIR FORCE  
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DESIGNED BY  
Porter  
CHECKED BY  
R. S. Galus  
ENGINEER  
F. W. Wood  
APPROVED BY  
D. Duff  
DRAWING CONTROL: # 294



TITLE Back Panel Cover  
Remote Recorder Switch

SIZE C DATE ESTABLISHED 7 SEP 84 DRAWING NUMBER 99-12-294  
SCALE Full DATE 9 JAN 97 SHEET 2 OF 5

FIG A  
HOLE LOCATION

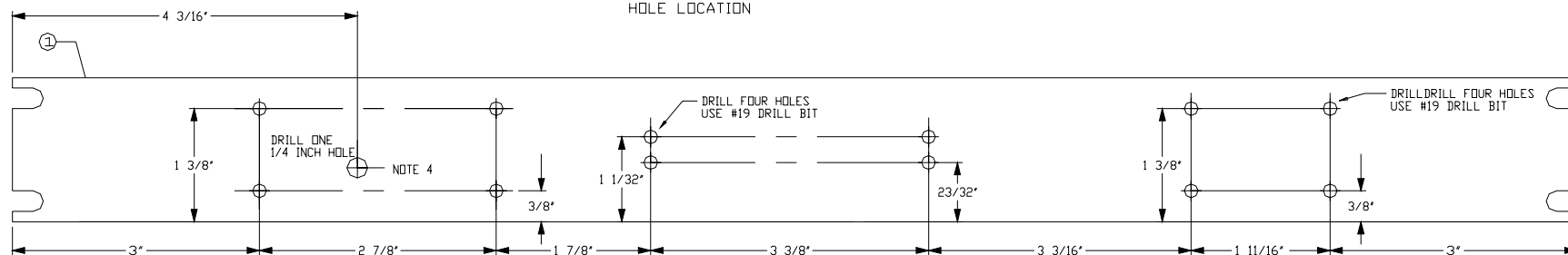


FIG B  
ILLUSTRATED PARTS BREAKOUT

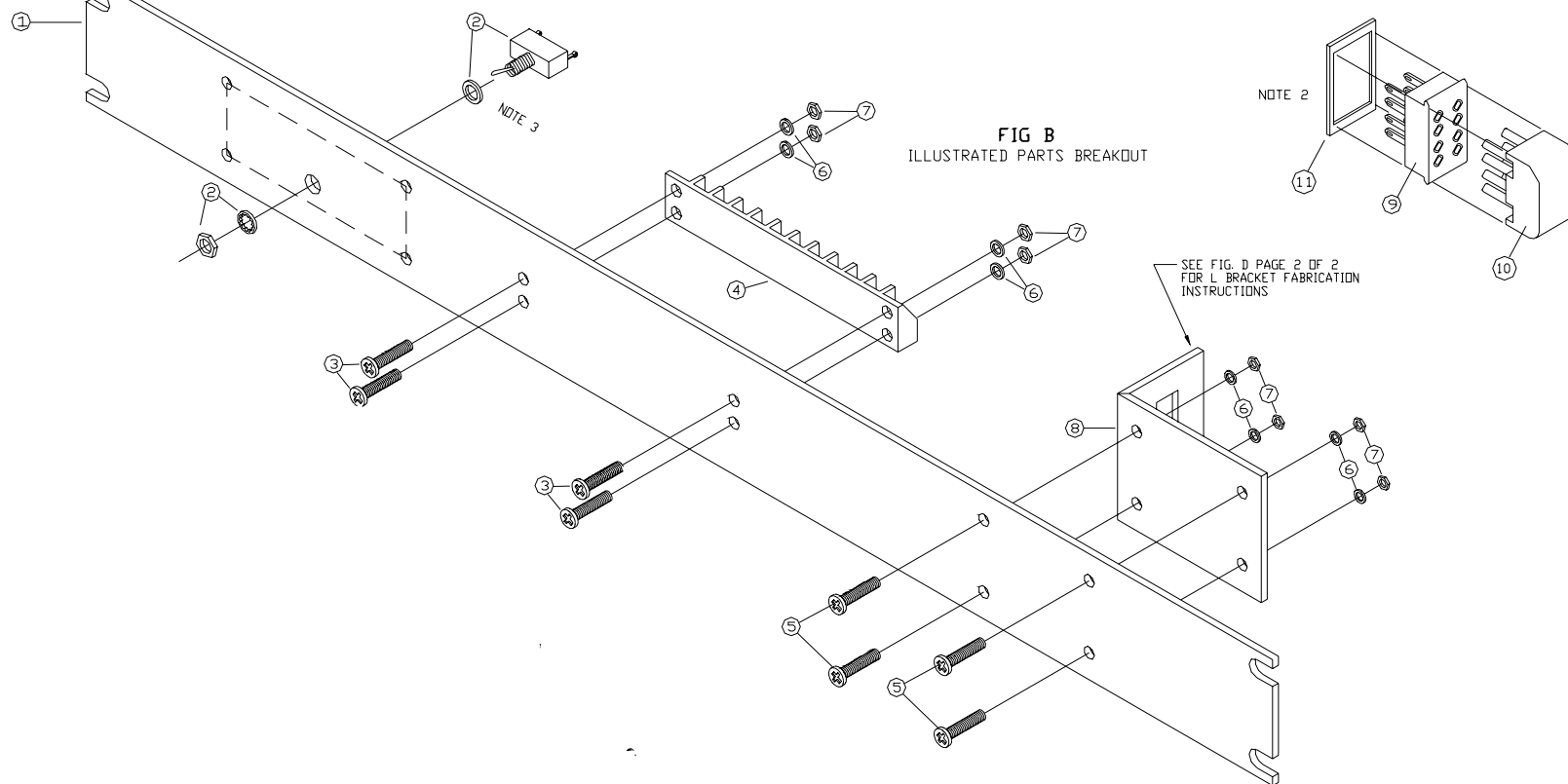


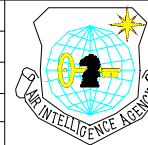
FIG A	DESCRIPTION	LINE ITEM	QTY
1	1 3/4" BLANK PANEL	00492	1
2	TOGGLE SWITCH	00190	1
3	SCREW 6 - 32 x 3/4	08085	4
4	TERMINAL BOARD	00380	1
5	6 - 32 x 3/8 SCREW	00801	4
6	#6 LOCK WASHER	00090	8
7	6-32 NUT	00096	8
8	22 GAUGE STEEL PLATE	00705	1
9	RELAY PLUG-IN SOCKET	01300	1
10	RELAY 12VDC	01299	1
11	PLATE, RETAINING	01301	1

NOTES:

1. ALL MEASUREMENTS ARE IN INCHES.
2. SECURE PLUG-IN SOCKET TO BRACKET WITH RETAINING PLATE (11-1301).
3. TOGGLE SWITCH COMES WITH A SPECIAL LOCK WASHER TO HOLD SWITCH IN PLACE. USING A NO. 50 DRILL BIT, DRILL A SMALL HOLE FOR KEY 1/16 INCH DEEP AND APPROXIMATELY 3/16 INCH TO THE LEFT OF THE CENTER OF THE 1/4 INCH HOLE. USE WASHER AS A TEMPLATE TO GET EXACT MEASUREMENT.
4. USE METPHO AS A TEMPLATE TO DRILL 1/4 INCH HOLE.

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AIR INTELLIGENCE AGENCY

DRAFTSMAN  
Brewer  
CHECKER  
C. Smith  
ENGINEER  
J. W. Lacy  
APPROVED  
D. Duff  
DRAWING CONTROL # 321



Relay Assembly  
SSHM-276-000321

SIZE C DATE ESTABLISHED 7 MAY 80 DRAWING NUMBER 99-12-294  
SCALE Full DATE 9 JAN 97 SHEET 3 OF 5



FIG. D  
"L" BRACKET

COMBINED WITH 99-12-294 AND  
99-14-322, TOTAL SHEETS 5

9 JAN 97 TMH

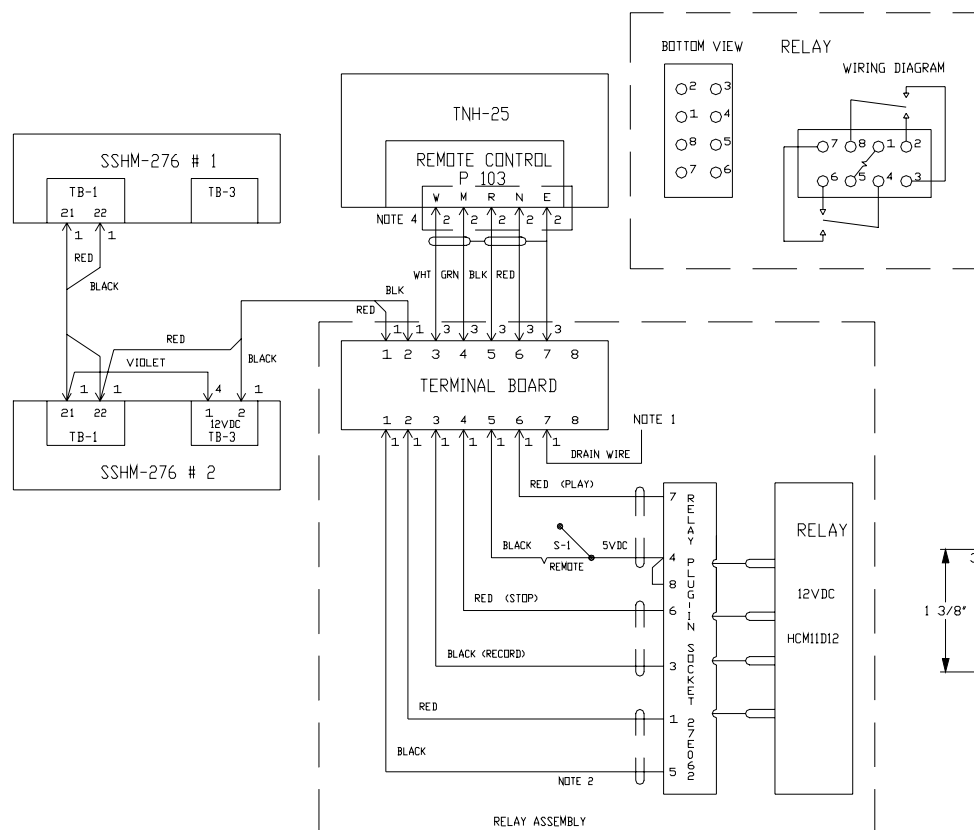
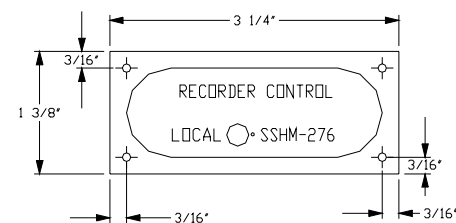


FIG. E  
METPHO (NOTE 3)




NOTES:

1. USING A TERMINAL LUG, CONNECT DRAIN WIRE TO ONE OF THE FOUR SCREWS HOLDING "L" BRACKET TO PANEL.
2. CUT SHIELD WIRES AND FLOAT THEM AT PLUG-IN SOCKET END. USE 1/8 INCH SHRINK TUBE ON ALL RELAY CONTACTS (LI 00416).
3. EIE STANDARDS WILL PROVIDE IDENTIFICATION PLATE.
4. ALL PINS LOCATED IN SINGLE CONNECTOR (LI 0187).

LEGEND:

NO	CABLE P/N	LI NO	CONNECTOR	LI NO	BACKSHELL	LI NO
1	BELDEN 8876	00809	TERMINAL LUG	01324		
2	BELDEN 88723	00842	M8372-24R2428N	01187	M83723-35S-24F	00733
3	BELDEN 88723	00842	TERMINAL LUG	01324		
4	VIOLET WIRE	07680	TERMINAL LUG	01324		

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

WATSON Brewer CHECKER C. Smith ENGINEER J. W. Lacy APPROVED D. Duff DRAWING CONTROL # 294		TITLE SSHM-276/ TNH-25 SIZE C 7 MAY 80 DATE ESTABLISHED 99-12-294 SCALE 1/4" = 1" JAN 97 SHEET 4 OF 5
---	---	--

UPDATED PLENUM CABLES CCB 23JUL92  
 COMBINED WITH 99-12-294 AND  
 99-14-322, TOTAL SHEETS 5 9 JAN 97 TMH

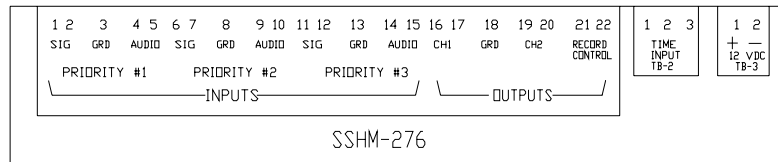


FIGURE "A"  
 SSHM-276 TERMINAL BOARD LAYOUT

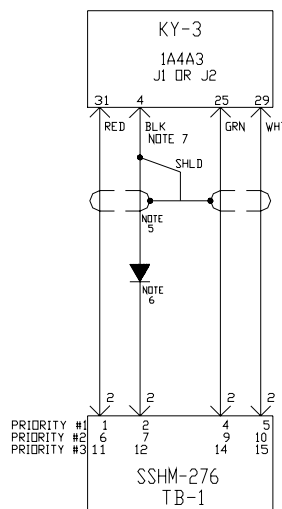


FIGURE "B"

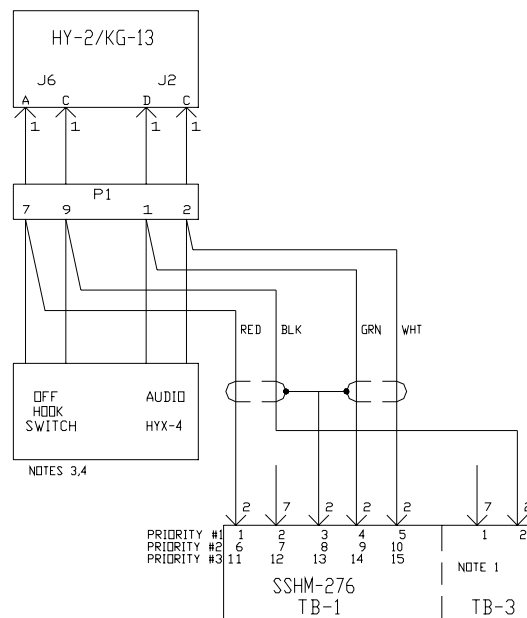


FIGURE "C"

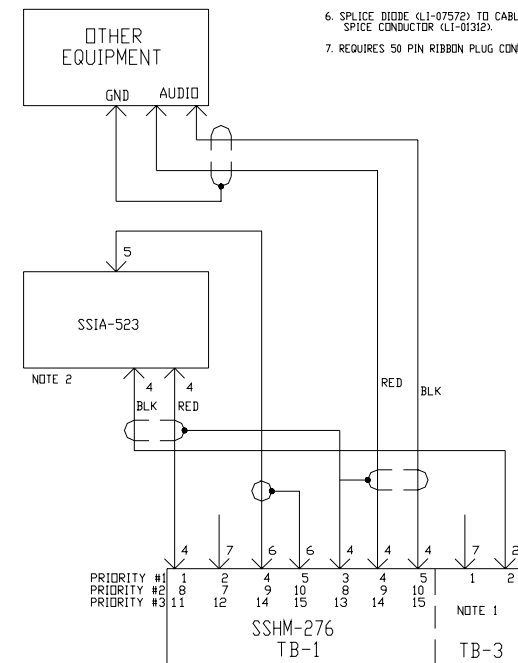


FIGURE "D"

# NOTES:

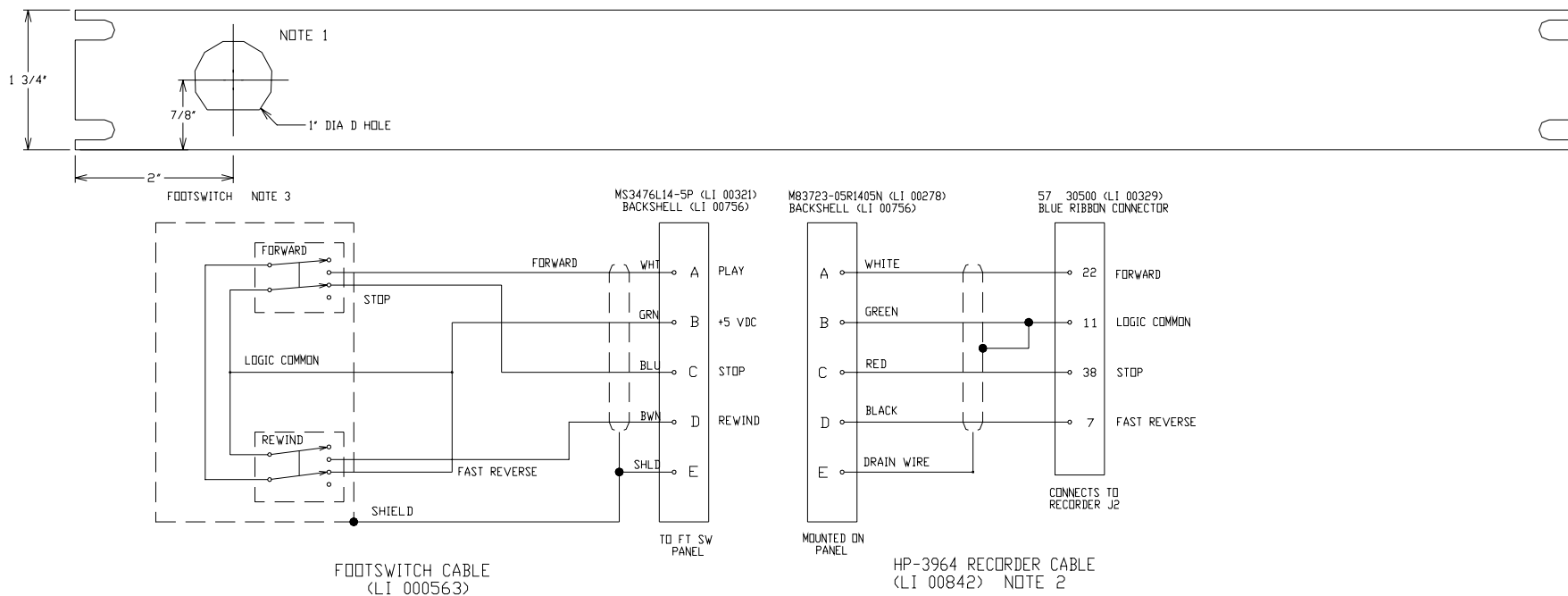
1. WITH EQUIPMENT SHOWN IN FIGURES "C" AND "D", PIN 1, TB-3 OF SSHM-276 MUST BE CONNECTED TO PINS 2, 7 OR 12, OF TB-1 DEPENDING ON PRIORITY EQUIPMENT IS ASSIGNED TO.
2. THE SSIA-523 IS REQUIRED WHEN THE EQUIPMENT USED HAS NO DC POTENTIAL CHANGE OR RELAY/SWITCH CONTACTS THAT ARE SUITABLE FOR RECORDER CONTROL. MFS WILL INDICATE REQUIREMENT.
3. INSTRUMENT TERMINATIONS IN FIGURE "C" IS TYPICAL. VARIOUS INSTRUMENTS MAY CONNECT SIMILARLY.
4. WHEN NO REMOTE INSTRUMENT IS USED, EQUIPMENT WILL BE WIRED TO SSHM-276, AS IN FIGURE "D".
5. SHIELD AND BLACK ARE TIED TOGETHER AT PIN 4. SHIELD NOT TERMINATED AT OTHER END.
6. SPLICE DIODE (LI-07572) TO CABLE USING SPLICE CONDUCTOR (LI-01312).
7. REQUIRES 50 PIN RIBBON PLUG CONNECTOR.

## LEGEND:

— CABLE WITH CONNECTOR

NO	CABLE P/N	LI NO	CONNECTOR P/N	LI NO
1	BELDEN 88723	00842	DNO-4344 (SUPPLIED)	
2	BELDEN 88723	00842	TERMINAL LUGS	01324
4	BELDEN 8876	00809	TERMINAL LUGS	01324
5	RG-174	02034	AMPHENOL 27-1	01324
6	RG-174	02034	TERMINAL LUGS	01324
9	VITREX WIRE	07680	TERMINAL LUGS	01324

U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE SSHM-276 Optional Inputs	
DRAFTSMAN C. C. Brewer	CHECKER C. Smith	ENGINEER C. C. Brewer	APPROVER D. Duff
DRAWING CONTROL # 294		DATE ESTABLISHED 4 JUN 80	
SIZE C		DRAWING NUMBER 99-12-294	
SCALE Full		DATE 9 JAN 97	
SHEET 5		OF 5	



BACKSHELL (LI 00756)  
M83723-35S17R

CONNECTOR (LI 00321)  
MS3476L14-5P

1 3/4" PANEL

HEX NUT

CONNECTOR (LI 00278)  
M83723-05R1405N

BACKSHELL (LI 00756)  
M83723-35S17R

#### NOTES:

ALL DIMENSIONS ARE IN INCHES (+/- 1/32)

1. WHEN TWO RECORDERS REQUIRE TWO FOOTSWITCHES, IT WILL BE NECESSARY TO PUNCH A SECOND HOLE, SAME SPACING, ON THE OPPOSITE END OF THE PANEL.
2. CONNECT THE NECESSARY LENGTH OF CABLE (LI 00842) TO THE M83723-05R1405N (LI 00278) AND TO A 57 30500 CONNECTOR (LI 00329).
3. IT WILL BE NECESSARY TO REWIRE FOOTSWITCH AS SHOWN TO CONTROL THE HP-3964 RECORDER.

#### REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	00278	M83723-05R1405N BULKHEAD CONNECTOR	1 EA
2.	00321	MS3476L14-5P CONNECTOR	1 EA
3.	00563	FOOTSWITCH CABLE	AS REQ
4.	00842	BELDEN 88723 CABLE	AS REQ
5.	00329	57 30500, 50 CONTACT, BLUE RIBBON CONNECTOR	1 EA
6.	00492	1 3/4 IN BLANK PANEL	1 EA
7.	00756	BACKSHELL	2 EA

#### U.S. AIR FORCE AIR INTELLIGENCE AGENCY

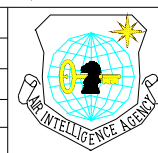
DRAFTSMAN  
Brewer

CHECKER  
C. Smith

ENGINEER  
P. M. Spalenka

APPROVED  
D. Duff

DRAWING CONTROL # 307



TITLE  
Footswitch Cable  
Details for HP-3964  
(Playback Function Only)

SIZE C	DATE ESTABLISHED 15 DEC 78	DRAWING NUMBER 99-12-307
SCALE Full	DATE 5 FEB 92	SHEET 1 OF 1

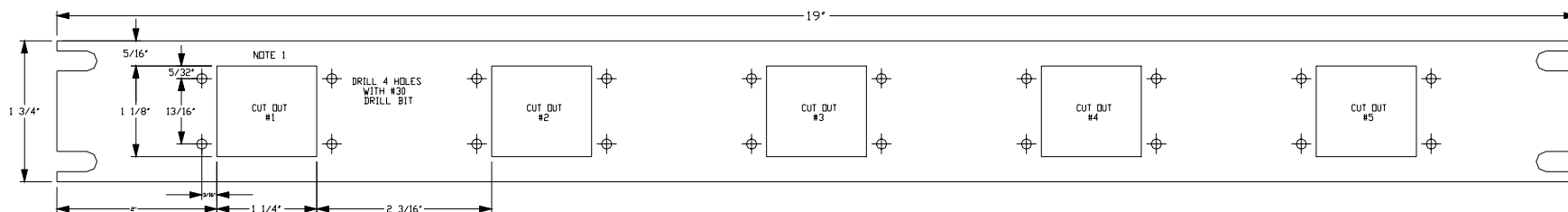
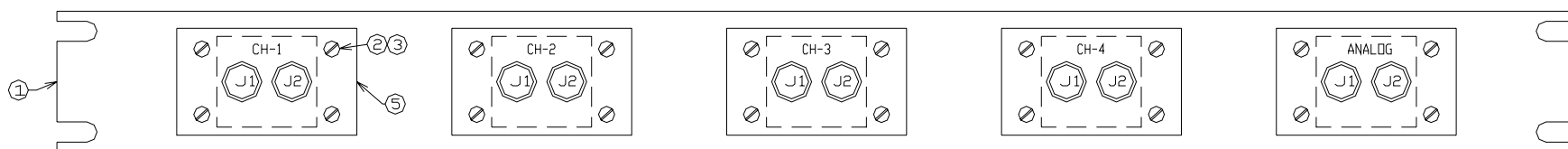
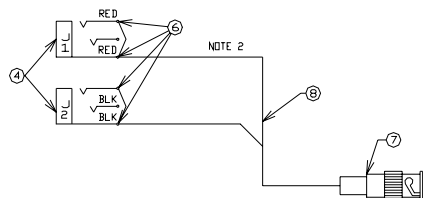
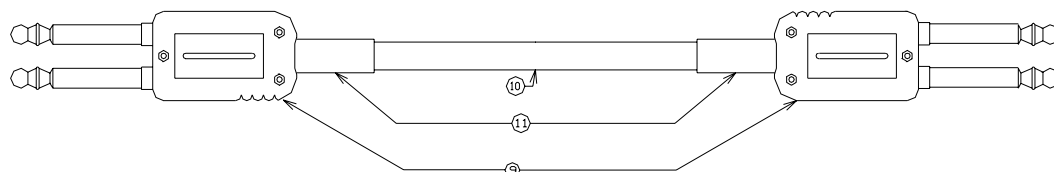
FIG A  
HOLE LOCATIONFIG B  
DUAL JACK BLOCK PLACEMENT

FIG C

FIG D  
PATCH CORD 18' LONG

## NOTES:

ALL DIMENSIONS ARE IN INCHES +/- 1/32 INCH.

- FIG A HOLE DIMENSIONS SHOWN ON CUT OUT #1 ARE CONSTANT FOR ALL 4 CUT OUTS.
- FIG C IS TYPICAL WIRING FOR ALL RECORDER OUTPUTS USING 10 FOOT PIECE OF BELDEN 8451 FOR EACH JACK. LACE CABLES TO THE LEFT WHEN VIEWED FROM THE FRONT OF PANEL.

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	00492	1 3/4 IN BLANK PANEL	1 EA
2.	07400	4-40 X 5/8 SCREW	20 EA
3.	00095	4-40 NUT, HEX	20 EA
4.	00879	JACK, JJ-022	5 EA
5.	00878	DUAL JACK BLOCK	5 EA
6.	00416	HEAT SHRINK	20 EA
7.	00361	BNC CONNECTOR	5 EA
8.	00615	BELDEN 8451	20 FT
9.	00378	TELEPHONE PLUG PJ-7	2 EA
10.	00894	BELDEN 8771	2 FT
11.	00416	HEAT SHRINK	2 EA

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

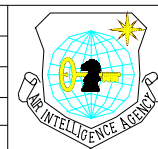
DRAFTSMAN  
P. M. Spalenka

CHECKER  
C. Smith

ENGINEER  
P. M. Spalenka

APPROVED  
D. Duff

DRAWING CONTROL # 319



TITLE  
Monitor Panel  
Audio Output Panel Wiring  
for TNH-21/TNH-25 Recorder

SIZE  
C

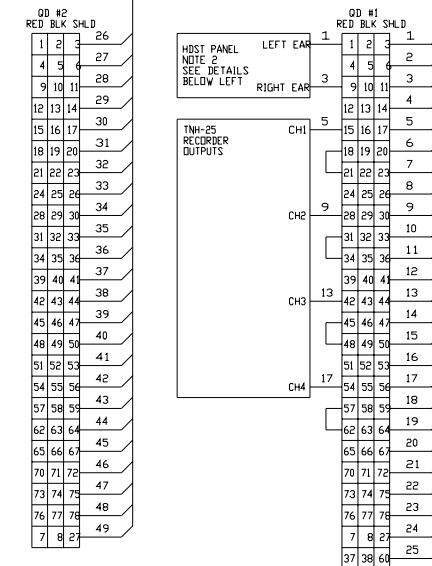
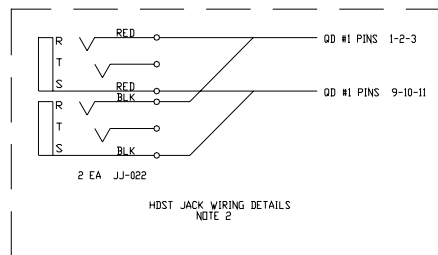
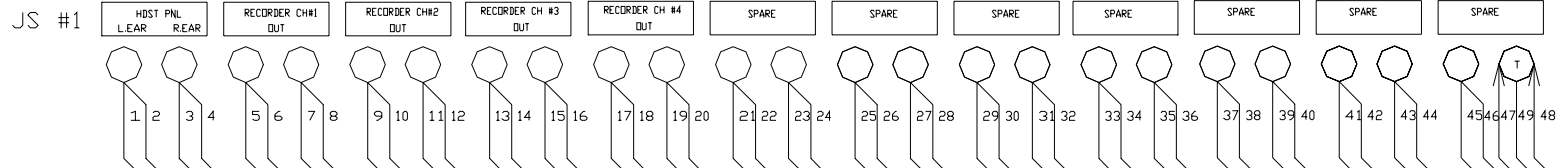
DATE ESTABLISHED  
21 MAR 80

DRAWING NUMBER  
99-12-319

SCALE  
Full

DATE  
12 MAR 93

SHEET 1 OF 1



## NOTES:

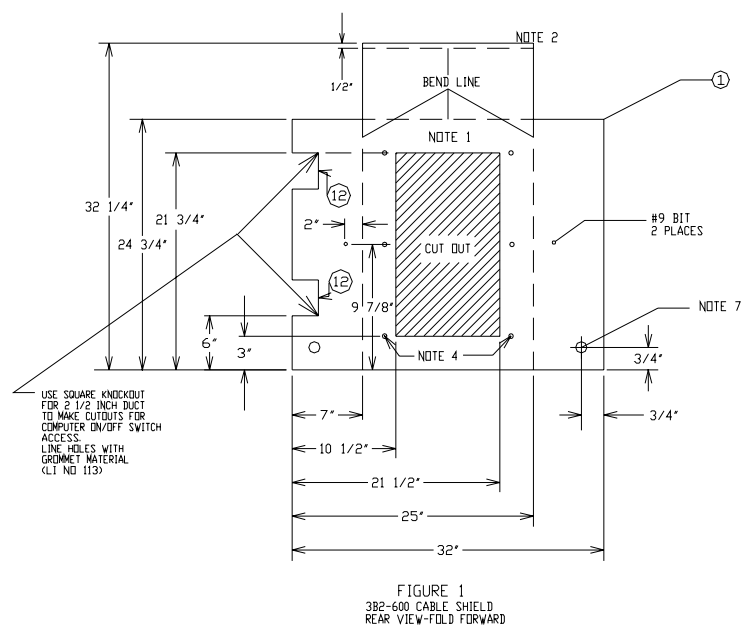
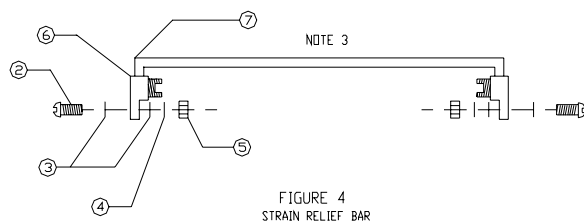
- JACKSTRIP FABRICATED IAW 99-11-044 WITH OD MOUNTED ON JACKSTRIP CONNECTOR MOUNTING FRAME.
- SEE 99-08-162 FOR FABRICATION OF HEADSET PANEL.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE Recorder Monitor Jackstrip #1	
DRAFTSMAN P. M. Spalenka	CHECKER C. Smith	ENGINEER P. M. Spalenka	APPROVED D. Duff
DRAWING CONTROL # 320		SIZE C	DATE ESTABLISHED 15 MAR 85
		DRAWING NUMBER 99-12-320	
		SCALE Full	DATE 12 MAR 93
		SHEET 1 OF 1	

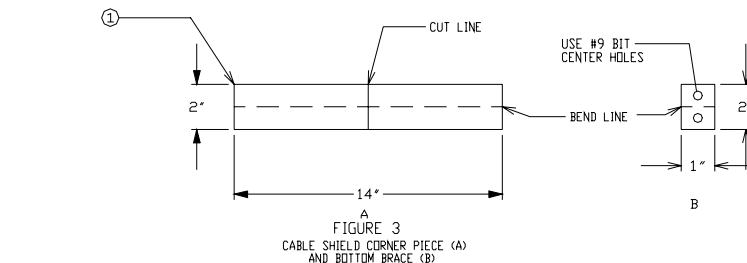
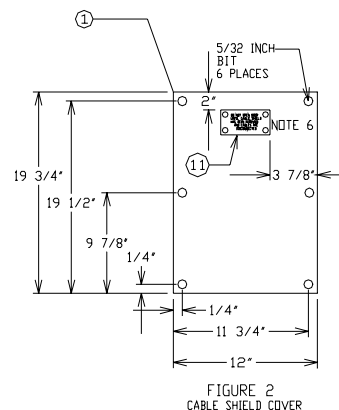


MOVED FROM CATEGORY 7 AND  
UPDATED NOTES

9 JAN 97 TMH

FIGURE 1  
3B2-600 CABLE SHIELD  
REAR VIEW-FOLD FORWARDFIGURE 4  
STRAIN RELIEF BARPREFABRICATION  
REQUIRED MATERIALS LIST

FIND	LT NO	DESCRIPTION	QTY
1.	1792	SHEET METAL, ALUMINUM .063 THICK	AR
2.	27	SCREW, 10-32 X 1/2, PAN HEAD	2
3.	70	WASHER, FLAT	4
4.	103	WASHER, LOCK	2
5.	94	NUT, HEX FOR 10-32 SCREW	2
6.	385	TERMINAL LUG	2
7.	538	WIRE, 6 AWG SOLID	AR
8.	11	SCREW, SELF TAP METAL, PAN HEAD	6
9.	21	RIVET BLIND STEEL	12
10.	1918	PAINT	AR
11.	158	METALLIC PHOTO	1
12.	113	GROMMET MATERIAL	AR

FIGURE 3  
CABLE SHIELD CORNER PIECE (A)  
AND BOTTOM BRACE (B)FIGURE 2  
CABLE SHIELD COVER

## FABRICATION NOTES:

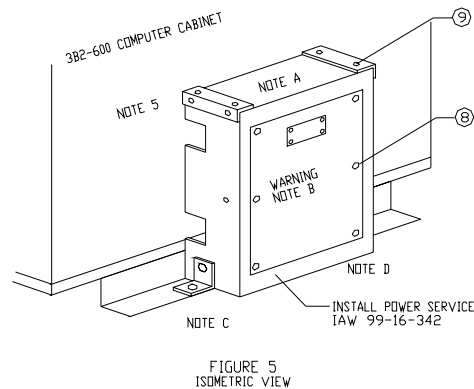
TOLERANCE IS + OR - 1/16 INCH  
ALL BENDS ARE 90 DEGREES + OR - 2 DEGREES.

1. BEND THREE INNER BEND LINES IN THE SAME DIRECTION. A RUBBER Mallet WILL BE REQUIRED TO COMPLETE THE BENDS.
2. OUTER BEND IS IN OPPOSITE DIRECTION TO INNER BENDS.
3. AFTER BENDING, INSTALL TERMINAL LUGS (LT 385) ON SIDES AND MEASURE DISTANCE BETWEEN THEM. CUT WIRE (LT 538) TO FIT.
4. USE CABLE SHIELD COVER AS TEMPLATE FOR DRILLING HOLES. CENTER COVER OVER OPENING BEFORE MARKING. DRILL BIT FOR HOLES IS 3/32 INCH. USE #6 SELF TAPPING SCREWS (LT 11) TO SECURE COVER.
5. TRIM AND BUFF FIG 3 A AND INSTALL ON EDGES OF CABLE SHIELD USING POP RIVETS (LT 21). DRILL HOLES WITH #30 DRILL BIT SPACED EVENLY IN FOUR CORNERS OF EACH BRACE.
6. USE METALLIC PHOTO (METPHO LT 158) AND POP RIVETS (LT 21) TO ATTACH SIGN TO SHIELD AS SHOWN. SPACE RIVETS EVENLY IN FOUR CORNERS OF METPHO.
7. THESE HOLES ARE DRILLED DURING INSTALLATION. DO NOT DRILL DURING FABRICATION.

## INSTALLATION NOTES:

INSURE 3B2-600 IS ANCHORED TO FLOOR BEFORE PROCEEDING TO INSTALL CABLE SHIELD.

- A. CABLE SHIELD IS SECURED TO 3B2-600 BY 1/2 INCH LIP AND EXISTING SCREWS. PUT CABLE SHIELD IN PLACE TO MARK FOR DRILLING. DRILL HOLES AND SECURE USING ALL SCREWS ON TOP.
- B. THE CROSSBAR IS FOR STRAIN RELIEF. DO NOT OVER TIGHTEN TY-RAPS. SOME CABLES ARE FIBER OPTICS.
- C. USE FILE TO FIT EDGE OVER FLOOR BRACKET DURING INSTALLATION. ATTACH CABLE SHIELD BOTTOM BRACE (FIG 3 B) TO CABLE SHIELD WITH RIVETS (LT 21) AND TO FLOOR BY DRILLING FLOOR BRACKET WITH #21 BIT AND 10-32 TAP AND 10-32 SCREWS.
- D. USE DWG 99-06-331 AS REFERENCE TO CUT HOLE. HOLE SHOULD BE RECTANGULAR, NO WIDER THAN 3 INCHES AND NO LONGER THAN SPACE AVAILABLE BETWEEN POWER SERVICE AND RIGHT EDGE OF BOX.

FIGURE 5  
ISOMETRIC VIEWU.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

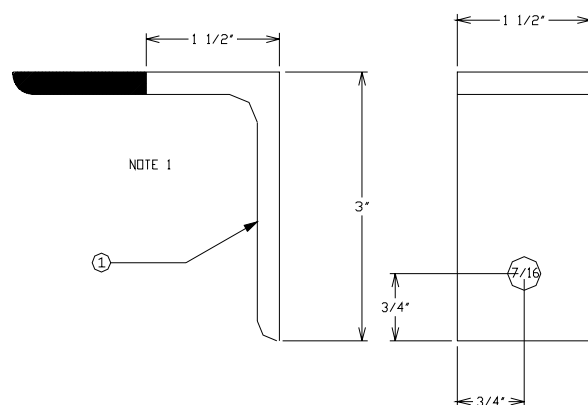
DRAFTSMAN  
C C Brewer  
CHECKER  
C Smith  
ENGINEER  
D J Moore  
APPROVED  
D. Duff  
DRAWING CONTROL # 032



TITLE  
3B2-600 Cable  
Shield Construction

SIZE DATE ESTABLISHED DRAWING NUMBER  
C 10 AUG 90 99-13-032

SCALE DATE SHEET  
Full 9 JAN 97 2 OF 4



3B2-600 COMPUTER CABINET

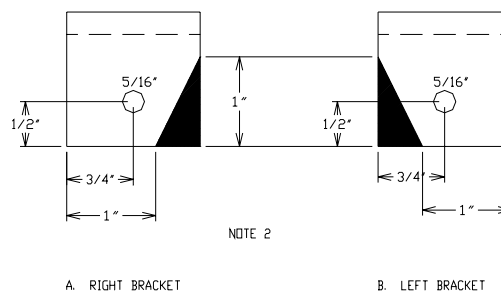


FIG 1. BRACKET CONSTRUCTION

## FABRICATION NOTES:

TOLERANCE IS + OR - 1/16 INCH

1. CUT TWO 1 1/2 INCH PIECES FROM STOCK ALUMINUM ANGLE (L1 977). ON ONE LEG OF EACH PIECE CUT TO 1 1/2 INCHES. IN THREE INCH LEG OF BOTH PIECES, DRILL 7/16 INCH HOLE AT DIMENSIONS SPECIFIED IN FIG 1.
2. IN 1 1/2 INCH LEG OF BOTH PIECES, DRILL 5/16 INCH HOLE AT DIMENSIONS SPECIFIED IN FIG 1. SHADED AREA OF BOTH PIECES MUST BE REMOVED TO ACCOMMODATE WHEEL MOUNT ON 3B2-600.
3. CUT ONE 22 INCH SECTION FROM L1 701 ALUMINUM ANGLE AND DRILL TWO HOLES 5 1/2 INCHES FROM ENDS AND CENTERED FRONT TO BACK AS DESCRIBED IN FIG 3.

## INSTALLATION NOTES:

- A. REMOVE NUT FROM OUTSIDE BACK OF 3B2-600 WHEEL MOUNTS. MOUNT BRACKET WITH APPROPRIATE CUT OUT USING FLAT WASHER AND THE NUT PREVIOUSLY REMOVED.
- B. PUT 3B2-600 IN PLACE ON FLOOR. PLACE 2 INCH ANGLE ALUMINUM (L1 701) ON FLOOR AGAINST WHEEL BRACKETS JUST INSTALLED. MARK FLOOR FOR DRILLING AND MOUNT 22 INCH ANGLE ALUMINUM TO FLOOR (AW NOTE C). PUT 3B2-600 AGAINST FLOOR BRACKET AND MARK FOR DRILLING. SECURE TWO BRACKETS AS SHOWN IN FIG 2.
- C. SEE DWG 99-06-325 FIG A (CY597) FOR ANCHORING DETAILS.

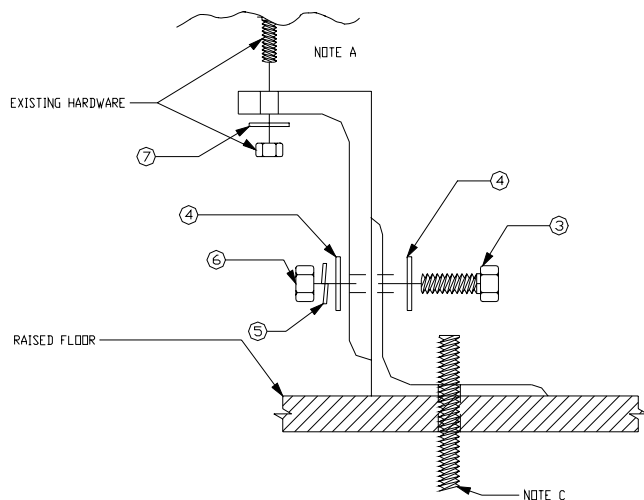


FIG 2. BRACKET MOUNTING

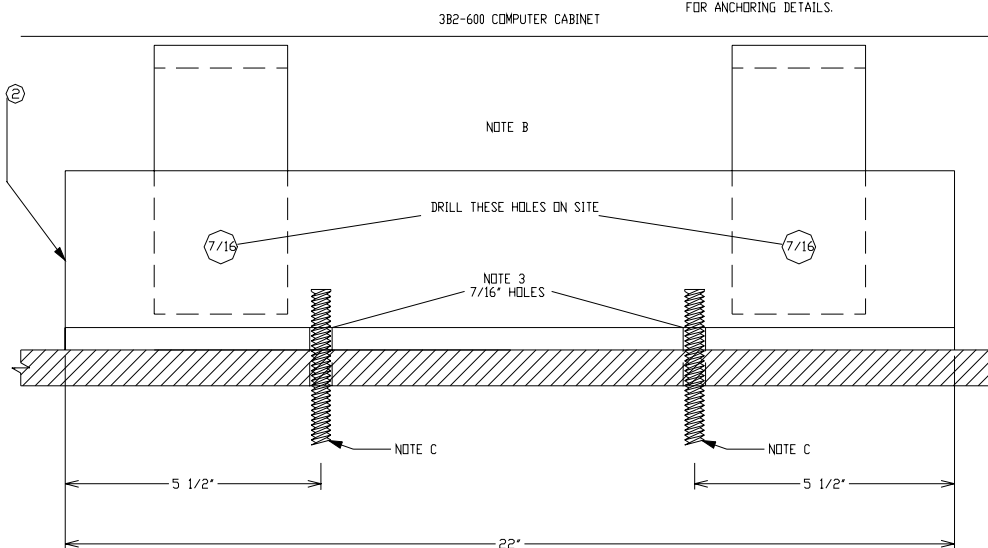


FIG 3. PLACEMENT

PREFABRICATION  
REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	977	3 INCH ALUMINUM ANGLE	A/R
2.	701	2 INCH ALUMINUM ANGLE	A/R
3.	799	BOLT, 3/8 INCH	2 EA
4.	86	FLAT WASHER 3/8 INCH	4 EA
5.	998	LOCK WASHER 3/8 INCH	2 EA
6.	105	HEX NUT, 3/8 INCH	2 EA
7.	79	FLAT WASHER 1/4 INCH	2 EA

DRAFTSMAN C. C. Brewer		TITLE 3B2-600 Bracket and Floor Mounting Details	
CHECKER C. Smith		DATE ESTABLISHED 10 AUG 90	
ENGINEER D. J. Moore		DRAWING NUMBER 99-13-032	
APPROVED D. Duff		SCALE Full	
DRAWING CONTROL: # 032		DATE 9 JAN 97	
		SHEET 3 OF 4	



MOVED FROM CATEGORY 7 AND  
UPDATED NOTES

9 JAN 97 TMH

## FABRICATION NOTES:

1. CUT PIPE (LI 921) TO 10 3/4 INCHES AND THREAD 1 INCH OF EACH END.
2. DETAIL A DUCT DIMENSIONS DETERMINED BY DIRECTLY CONNECTING THE TWO ELBOWS AS SHOWN. CENTER RAILING FLANGE (LI 922) IN DUCT BEND BEFORE SECURING JAW DETAIL B.
3. PAINT WITH EMCOR BLUE (LI 125).

## INSTALLATION NOTES:

- A. SECURE RACK B TO FLOOR. TEMPORARILY LOCATE RACK C SPACED 14 INCHES FROM AND ALIGNED WITH THE FRONT OF RACK B. PLACE DETAIL A DUCT AS SHOWN. MARK AND CUT HOLES FOR DUCT FLANGES AND CONDUIT, AND INSTALL. DO NOT SECURE BOTTOM FLANGE IN DETAIL B TO FLOOR.
- B. CUT 2 INCH HOLE FOR SIGNAL AND/OR POWER CORD AND LINE WITH GROMMET MATERIAL JAW WITH FIG 2.
- C. SEE 99-13-288 FOR SIGNAL AND POWER DROP DETAILS. WHEN PRINTER IS LOCATED NEXT TO RACK B, SPECIFY DUAL AC STRIP.
- D. PRINTER MUST HAVE 2 FEET CLEARANCE ON THREE SIDES FOR SERVICE AND USE. LIMITATION ON PLACEMENT OF TABLE IS 25 FOOT CABLE SUPPLIED BY MANUFACTURER. IF A NEW CABLE IS FABRICATED TABLE MAY BE PLACED ANYWHERE. PAPER TRAY EXTENDS ELEVEN INCHES BEYOND PRINTER ON ONE SIDE. PRINTING IS EJECTED AT OTHER SIDE AND FRONT FOLDS DOWN TO SERVICE PRINTER. PRINTER POWER CORD IS 6 FEET LONG. EXTENSION CORD OR POWER DROP IS REQUIRED TO POWER PRINTER. IF CABLES ARE ROUTED ON FLOOR FROM RACK B TO RACK A, USE WIRE MOLD TO PROTECT CABLES. MAINTAIN 6 INCHES SEPARATION BETWEEN POWER AND SIGNAL CABLES.

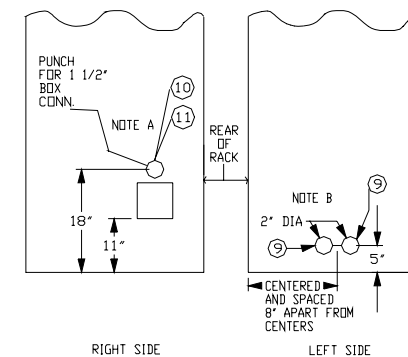


FIG 2. EMCOR RACK SIDE DETAILS

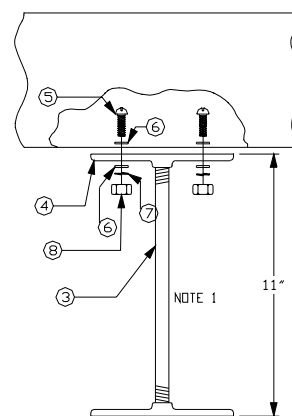

DETAIL B  
DUCT SUPPORT

FIG 1. EQUIPMENT LAYOUT

PREFABRICATION  
REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	7483	4 INCH FLANGE	2EA
2.	7519	4 INCH ELBOW	2EA
3.	921	PIPE, GALVANIZED, STEEL, 1/2 INCH CONDUIT	AR
4.	922	RAILING FLANGE FOR 1/2 INCH CONDUIT	4EA
5.	7554	SCREW, 4-20, 1 1/2 INCH	8EA
6.	79	FLAT WASHER	16EA
7.	104	LOCK WASHER	8EA
8.	106	NUT	8EA
9.	113	GROMMET, NYLON STRIP	AR
10.	1251	1 1/2 INCH FLEX CONDUIT	3 FT
11.	1252	1 1/2 INCH STRAIGHT BOX CONNECTOR	2 EA

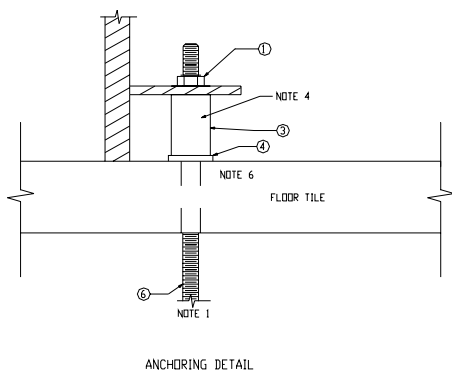
U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE 3B2-600 Front Panel Hard Floor	
DRAFTSMAN C. C. Brewer CHECKER C. Smith ENGINEER D. J. Moore APPROVED D. Duff DRAWING CONTROL: # 032		SIZE C DATE ESTABLISHED 10 AUG 90 SHEET 4 OF 4	DRAWING NUMBER 99-13-032 DATE 9 JAN 97 SHEET 4 OF 4

M062-1

MOVED FROM CATEGORY 16 AND UPDATED NOTES 10 JAN 97 TMH  
Q498-004 DELETE YELLOW WIRE FOR GROUNDING 11 DEC 98 JD

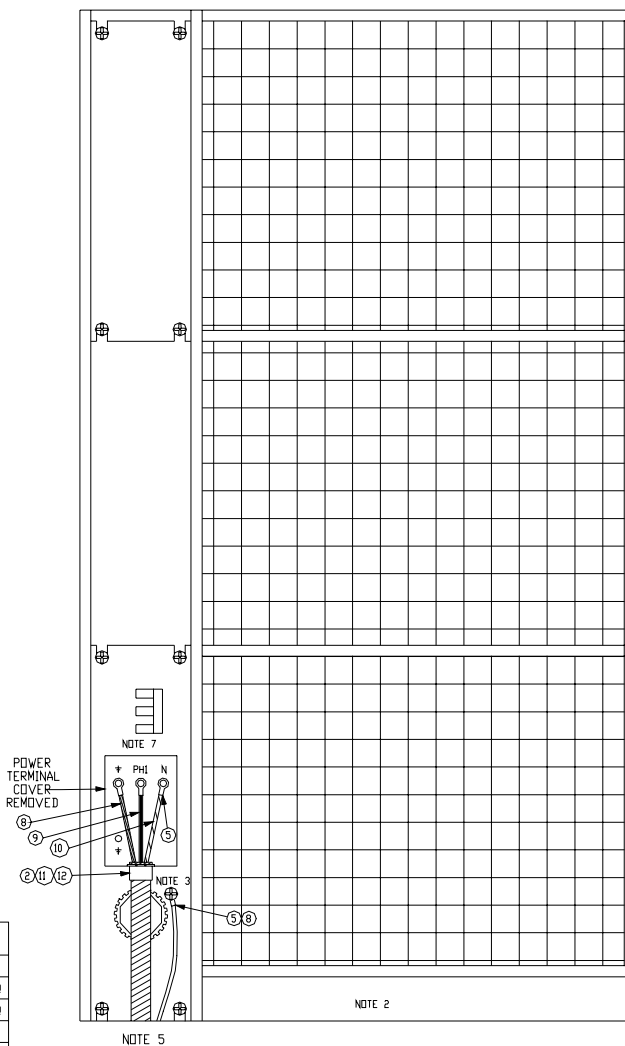
## NOTES:

1. SEE 99-06-325 FOR RAISED FLOOR CABINET ANCHORING DETAILS.
2. REMOVE WHEELS AND LEVELING FEET. KICK PLATE ON REAR AND STABILIZER FOOT IN FRONT MUST BE REMOVED TO FACILITATE THIS. ANCHOR CABINET USING THREADED HOLES FROM LEVELING FEET IN ALL FOUR CORNERS.  
CAUTION: DO NOT DRILL OUT PRE-THREADED HOLES.
3. CONNECT GROUND SCREW TO STATION GROUND BUS PER 99-06-325. APPLY ANTICORROSION COMPOUND L/1 8440 TO GROUND BONDS. REFER TO T. D. 31-10-24 CHAPTER 4.
4. CUT CONDUIT SPACER TO LENGTH REQUIRED FOR SUPPORT SHIM.
5. SEE 99-06-331, SHT 1, FOR RAISED FLOOR CUTOUT DETAILS AND MATERIALS.
6. 7/16 INCH DIA. HOLE REQUIRED.
7. REMOVE EXISTING POWER CORD FOR NEW INSTALLATION. LABEL BLACK WIRE L1 AND RED WIRE L2. (TERMINALS ARE PRE-LABELED: PH1 & N). CIRCUIT IS 200 - 240VAC, 24 AMPS. WIRING SHOWN USES DOMESTIC CONFIGURATION. SEE SUN INSTALLATION MANUAL IF EUROPEAN CONFIGURATION IS REQUIRED. USE 2 POLE, COMMON TRIP, 30 AMP BREAKER. SEE 99-16-328 FOR RAISED FLOOR POWER DETAILS.



## REQUIRED MATERIALS LIST

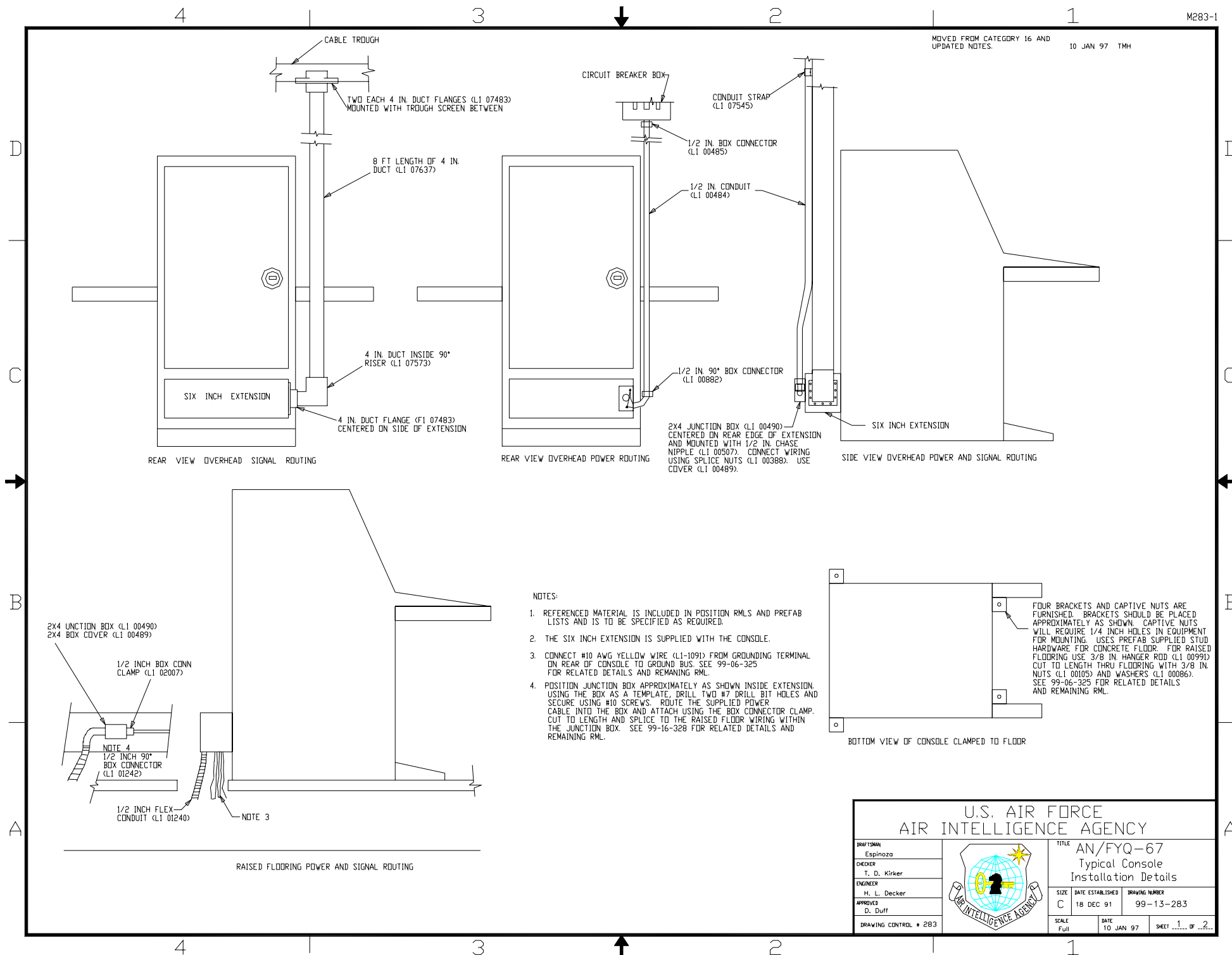
FIND	L1 NO	DESCRIPTION	QTY
1.	00105	3/8 INCH HEX NUT	1 EA
2.	01240	1/2 INCH FLEXIBLE CONDUIT	AS REQ
3.	00484	1/2 INCH EMT CONDUIT	AS REQ
4.	07731	3/8 INCH X 1 INCH OD FLAT WASHER	1 EA
5.	01298	TERMINAL LUG	4 EA
6.	00991	3/8-16 THREADED STOCK	AS REQ
7.	0845	SPLIT BOLT CONNECTOR	NOT SHOWN 1 EA
8.	07119	GREEN 10 AWG WIRE	AS REQ
9.	07142	BLACK 10 AWG WIRE	AS REQ
10.	07893	RED 10 AWG WIRE	AS REQ
11.	01241	BOX CONN. FOR 1/2 INCH FLEXIBLE CONDUIT	1 EA
12.	00651	INSULATOR BUSHING FOR BOX CONN	1 EA
13.	08440	ANTICORROSION COMPOUND	AS REQ

REAR VIEW  
POWER DETAILU.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
P. M. Spalenka  
CHECKER  
C. Smith  
ENGINEER  
P. M. Spalenka  
APPROVER  
J. Davis  
DRAWING CONTROL # 062

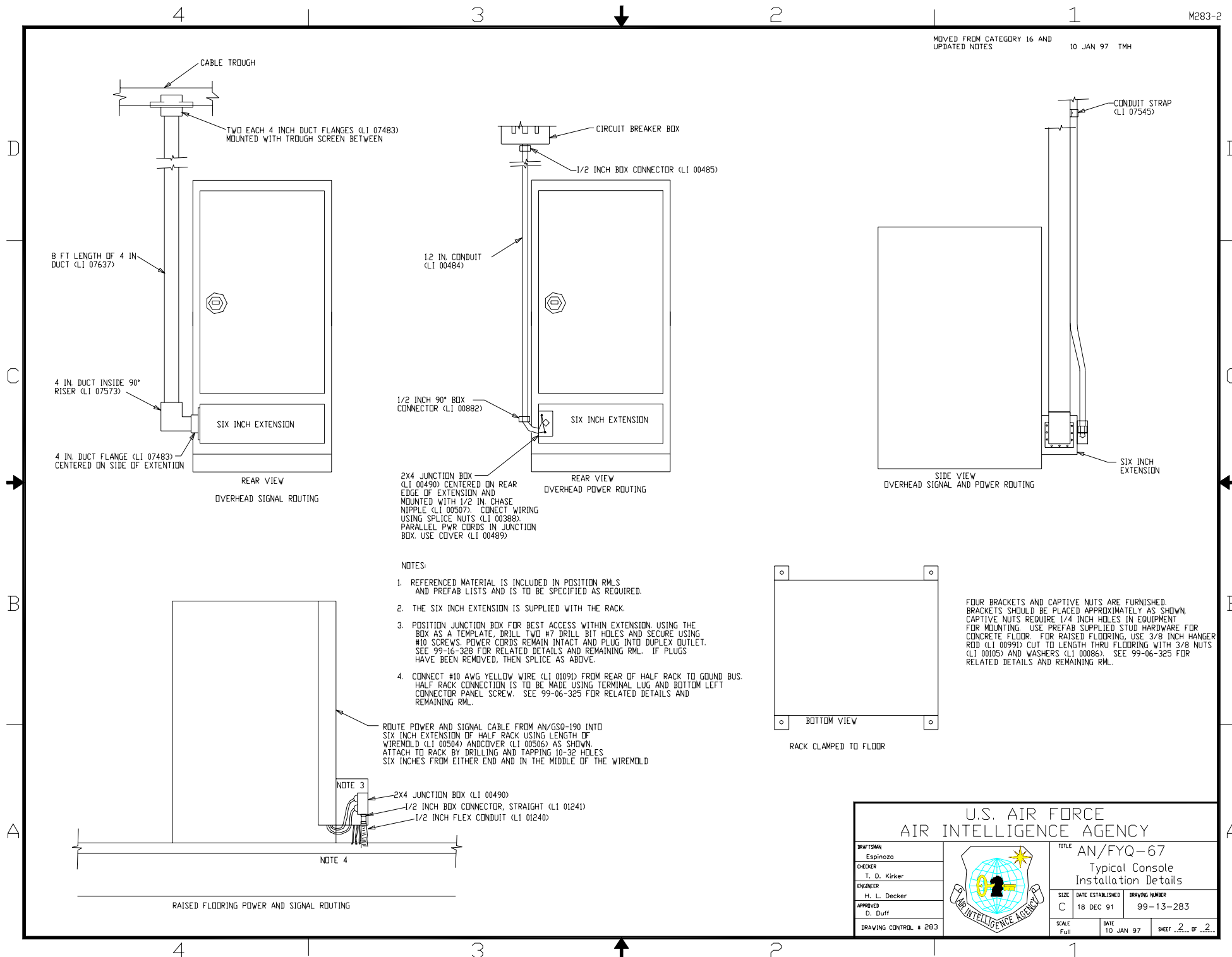
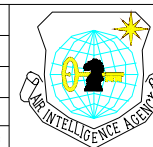


TITLE  
SUN 56-Inch  
Cabinet Power and Anchoring  
SIZE  
C  
DATE ESTABLISHED  
20 AUG 93  
DRAWING NUMBER  
99-13-062  
SCALE  
Full  
DATE  
11 DEC 98  
SHEET  
1 OF 1



MOVED FROM CATEGORY 16 AND  
UPDATED NOTES

10 JAN 97 TMH

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

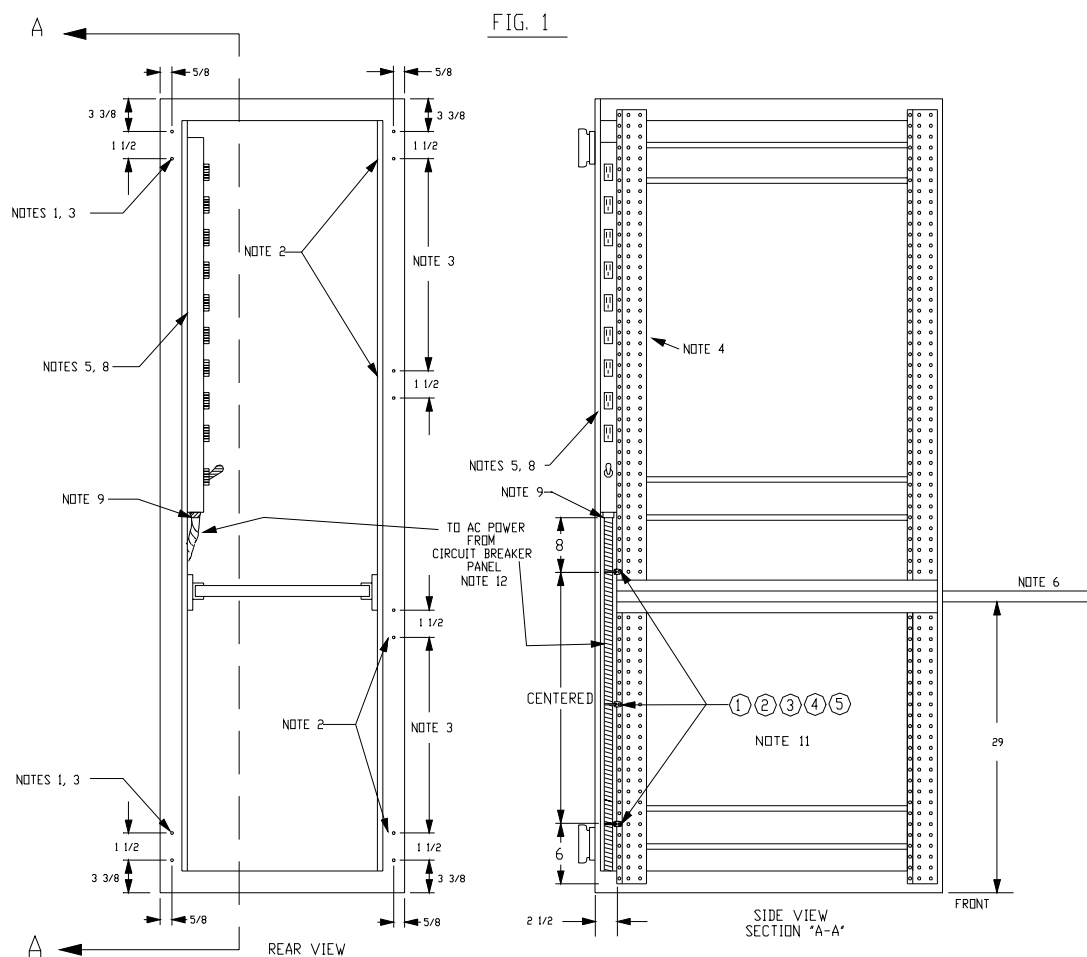
TITLE AN/FYQ-67  
Typical Console  
Installation Details

DRAFTSMAN  
Espinoza  
CHECKER  
T. O. Kirker  
ENGINEER  
H. L. Decker  
APPROVED  
D. Duff  
DRAWING CONTROL # 283

SIZE C DATE ESTABLISHED 18 DEC 91 DRAWING NUMBER 99-13-283

SCALE Full DATE 10 JAN 97 SHEET 2 of 2

M288-1



CHANGED NOTE 3  
CHANGED NOTE 7  
MOVED FROM CATEGORY 16, DELETED  
SHEET 4, AND UPDATED NOTES  
ADDED NOTE 11.  
PP00-001 ADDED NOTE 12

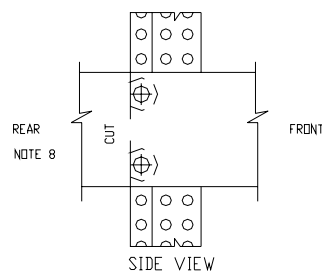
25 OCT 93 PMS  
18 APR 94 REM  
10 JAN 97 TMH  
30 MAR 98 PMS  
25 AUG 00 JD

NOTES: ALL DIMENSIONS IN INCHES (+/- 1/32)

1. MOUNT RACK HOOKS ON THE BACK OUTER SURFACE LEFT SIDE (REAR VIEW) IN THE PRE-DRILLED HOLES PROVIDED, WITH HOOK FACING RIGHT. MOUNTING HARDWARE SUPPLIED WITH DOOR.
2. MOUNT HINGE ON THE BACK OUTER SURFACE RIGHT SIDE (REAR VIEW) IN THE PRE-DRILLED HOLES PROVIDED, WITH HINGE FACING RIGHT. MOUNTING HARDWARE SUPPLIED WITH DOOR.
3. IF REQUIRED, DRILL 1/4 INCH HOLES TO MOUNT LATCHES AND HINGES, AS SHOWN IN FIG. 1, (REAR VIEW). FOR RACKS XFR317019 (LI-303B) AND XFR317024 (LI-3043) SPACE BETWEEN HOLE IS 20 1/4", FOR XFR317819 (LI-62) SPACING IS 23 1/4". FOR RACK XFR-314919 (LI 3060) SPACING IS 13 1/4". OTHER RACKS ARE SUPPLIED WITH TWO HOOKS AND HINGES, USE DIMENSIONS OF TOP AND BOTTOM HINGES AND LATCHES.
4. RE-MOUNT THE TWO REAR MOUNTING ANGLES WITH THE MOUNTING EDGE TURNED AROUND FACING THE FRONT OF THE RACK AT THE SAME HEIGHT AS THE FRONT MOUNTING ANGLE. SEE FIG. 1 (SECTION A-A) FOR PLACEMENT. SEE FIG. 2 FOR MOUNTING DETAILS.
5. MOUNT PLUG-STRIP AS SHOWN IN FIG. 1, SEE 99-16-328 FOR FABRICATION DETAILS AND REQUIRED MATERIALS.
6. IF REQUIRED, MOUNT SHELF AS SHOWN IN FIG. 1, SEE SHEET 2 FOR DETAILS AND REQUIRED MATERIALS.
7. WHEN MOUNTING SHELVES, SLIDES, EQUIPMENT SUPPORTS, ETC., TO THE REAR MOUNTING ANGLES USE FLAT WASHERS (LI 0079) TO FILL GAP AS REQUIRED, SEE FIG. 2.
8. IF REQUIRED, CUT REAR OF SHELF, SLIDE, ETC. FLUSH WITH REAR MOUNTING ANGLE AS REQUIRED TO CLEAR PLUG-STRIP. HEX NUTS (LI-94) CAN BE USED IN PLACE OF CAPTIVE NUT TO AVOID DISMANTLING PLUG-STRIP. FIG. 2.
9. WHEN MOUNTING EQUIPMENT SHELVES (LI 3049 OR 3056) ABOVE THIS POINT, IT IS NECESSARY TO NOTCH SHELVES TO ACCOMMODATE A.C. PLUG STRIP. WHEN VIEWED FROM THE TOP REAR, NOTCH THE LEFT REAR CORNER 2 1/2" W X 1" D.
10. TO ORDER EMCOR PAINT USE THE FOLLOWING INFORMATION: MEDIUM BLUE AEROSOL SPRAY PAINT, 10 SERIES EMCOR P/N LAS-MB, 16OZ. ESTIMATED COST: \$15.00 EA. (FOR RACK FRAME), DARK BLUE AEROSOL SPRAY PAINT, 10 SERIES EMCOR P/N LAS-BU, 16OZ. ESTIMATED COST: \$15.00 EA. (FOR RACK SIDE PANELS, DOORS, AND TOPS). AVAILABLE FROM: CRENLID INC., EMCOR PRODUCTS, 1600 FOURTH AVE., NW ROCHESTER, MN 55901.
11. ANCHOR FLEX CONDUIT TO RACK SIDE RAILS. AT EIGHT INCHES NOMINAL FROM BOTTOM OF POWER STRIP, SIX INCHES NOMINAL ABOVE BOTTOM OF RACK, AND CENTERED BETWEEN THE TOP AND BOTTOM TY-WRAP.
12. LABEL FLEX CONDUIT TAW DWG 99-16-332, SHT 1, NOTE 4.

## REQUIRED MATERIALS LIST

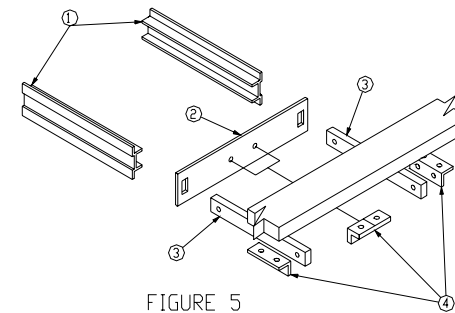
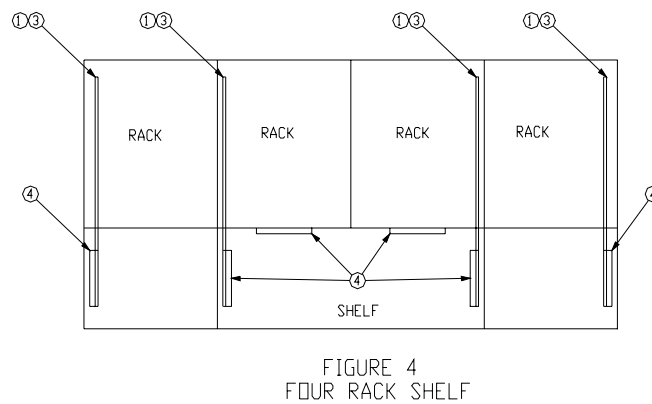
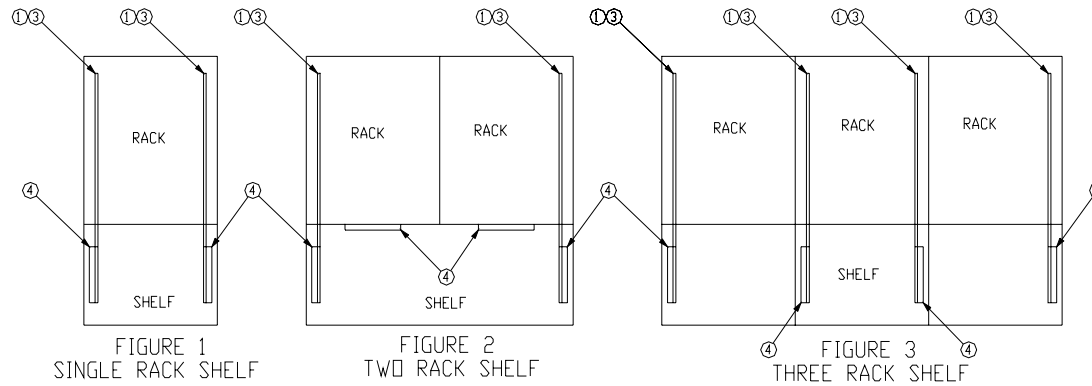
FIND	LI NO	DESCRIPTION	QTY
1.	79	WASHER FLAT	AS REQ
2.	63	CLIP NUT (EMCOR)	AS REQ
3.	27	SCREW 10-32	AS REQ
4.	132	TY WRAPS	3 EA
5.	149	TY-BUCKLE	3 EA

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN Brewer CHECKER R. S. Golus ENGINEER W. Moyers APPROVED D. Duff DRAWING CONTROL # 288			TITLE Emcor 10 Series Rack Preparation Shelf Mount Bracket/ Power Strip Installation SIZE C DATE ESTABLISHED 13 FEB 87 DRAWING NUMBER 99-13-288 SCALE Full DATE 25 AUG 00 SHEET 1 OF 4
--	--	--	---


MOVED FROM CATEGORY 16 AND  
DELETED SHEET 4.

10 JAN 97 TMH



TYPICAL SHELF MOUNTING. SEE FIGURE 1 THRU FIGURE 4  
FOR SPECIFIC PARTS LOCATION. MOUNTING BRACKETS  
SHOULD BE INSTALLED AT 29 INCHES FROM FLOOR.

FIND ITEM	DESCRIPTION	QUANTITY						REMARKS
		1 RACK	2 RACK	3 RACK	4 RACK			
1	INSIDE MOUNTING BRACKET	1 PR	1 PR	2 PR	2 PR			SUPPLIED W/ SHELF, INCLUDING HARDWARE
2	3 1/2" PANEL SUPPORT	1 EA	2 EA	3 EA	4 EA			
3	SUPPORT SLIDES	1 PR	1 PR	2 PR	2 PR			
4	SUPPORT BRACKET	1 PR	2 PR	2 PR	3 PR			

U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE Emcor Shelf Mounting and Support Bracket Location	
DRAFTSMAN Brewer CHECKER R. S. Galus ENGINEER D. E. Boone APPROVED D. Duff DRAWING CONTROL # 288		SIZE C DATE ESTABLISHED 13 FEB 87 SCALE Full	DRAWING NUMBER 99-13-288 DATE 10 JAN 97 SHEET 2 OF 4

M288-3

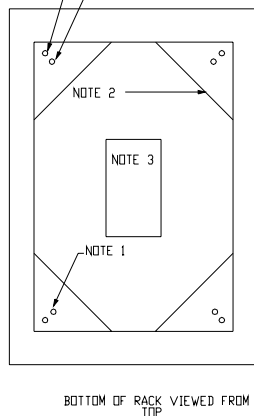
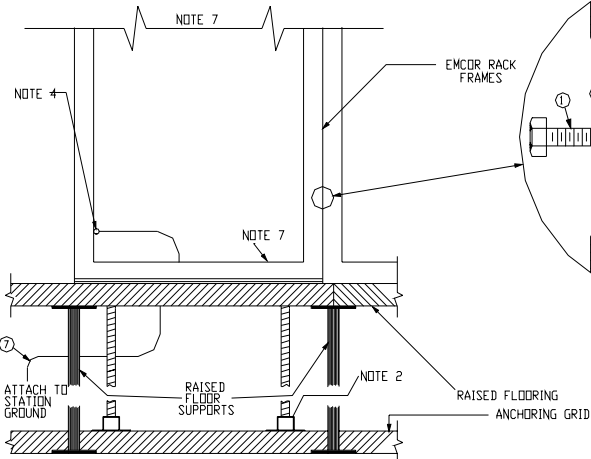
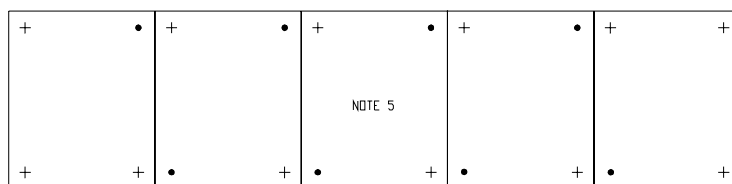
HOLE "B"  
HOLE A

FIG 1



SIDE VIEW

FIG 2



POSITION OF BOLTS IN BASE OF EQUIPMENT LINEUP

FIG 3

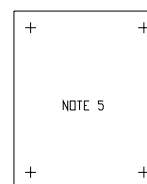
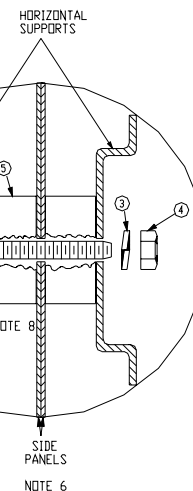
STAND ALONE RACK  
BOLT POSITION

FIG 4

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	59	1/4" - 20 X 2 1/2" BOLT PER TWO RACKS	4EA
2.	79	1/4" FLAT WASHER PER TWO RACKS	4EA
3.	104	1/4" LOCK WASHER PER TWO RACKS	4EA
4.	106	1/4" - 20 NUT PER TWO RACKS	4EA
5.	484	1/2" CONDUIT 8 SPACERS PER TWO RACKS	AS REQ
6.	385	TERMINAL LUG	1EA
7.	7119	#10 AWG GREEN WIRE	AS REQ
8.	845	SPLIT BOLT CONNECTOR NOT SHOWN	1EA
9.	27	10 - 32 X 1/2 SCREW NOT SHOWN	1EA
10.	63	CLIP NUT NOT SHOWN	1EA
11.	8440	ANTICORROSION COMPOUND NOTE 4	IF REQ

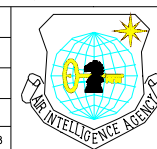


## NOTES:

- FLOOR TIE-DOWN LOCATION: HANGER ROD SHOULD BE PUT THROUGH HOLE "A".
- SEE 99-06-325 FOR RAISED FLOORING CABINET ANCHORING & GROUNDING DETAILS.
- SEE 99-06-331 FOR CUTOUT DETAILS.
- ATTACH #10 AWG GREEN WIRE (L/I 7119) TO STATION GROUND USING SPLIT BOLT CONNECTOR (L/I 845). ATTACH TO FIRST AVAILABLE HOLE ON REAR OF RACK VERTICAL UPRIGHT USING TERMINAL LUG (L/I 385) 10-32 X 1/2 IN MACHINE SCREW (L/I 27), AND A CLIP NUT (L/I 63). APPLY ANTICORROSION COMPOUND L/I 8440 TO GROUND BONDS. REFER TO T. O. 31-10-24 CHAPTER 4.
- + INDICATES STUD OR BOLT  
• INDICATES UNUSED HOLE  
SEE T.O. 31-10-29
- USING HOLES CLOSEST TO CABINET FRAME ON THE TOP AND BOTTOM HORIZONTAL SUPPORTS AS A TEMPLATE, DRILL FOUR HOLES THRU SIDE PANELS 1/4" DIA. FOR ATTACHING RACKS TOGETHER. IF SIDE PANELS ARE NOT USED, THEN SUPPLIED BRACKET, EMCOR P/N XJXC-F10-000000, IS TO BE USED TO ATTACH RACK 8 TOGETHER.
- SEE 99-15-344 FOR CABLE ROUTING, AND BETWEEN RACK CUT-OUT DETAILS IF REQUIRED.
- CUT CONDUIT TO LENGTH OF 1/2" (+/- 1/32") FOR USE AS A SPACER.
- FOR BOTH GROUNDLINE AND STATUETTE WORKSTATIONS MOUNT HARDWARE IN ALL FOUR CORNERS USING ANCHORING METHODS IN 99-06-325 SHT 4 OF 5, FIG A-1 FOR BOTH LINE-UP AND STAND-ALONE CONFIGURATIONS.

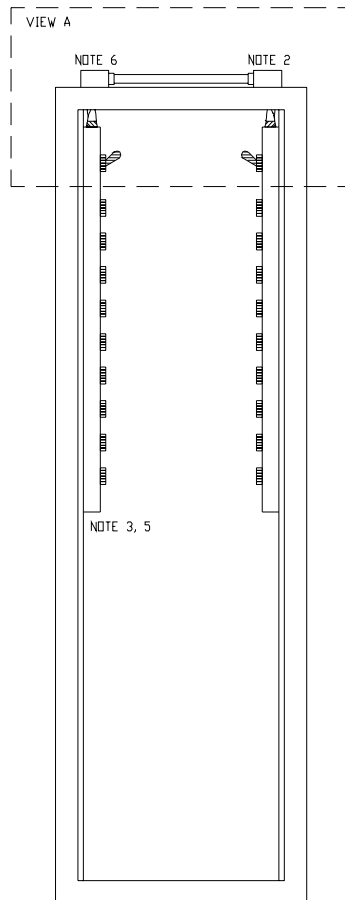
U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
Bewer  
 CHECKER  
R.S. Galus  
 ENGINEER  
W. Meyers  
 APPROVED  
J. Davis  
 DRAWING CONTROL # 288

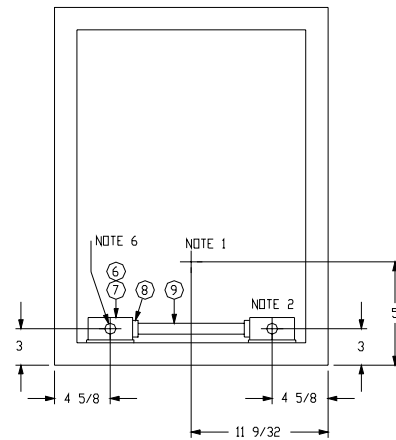


TITLE  
Encor 10 Series  
Rack Preparation  
Anchoring & Grounding  
 SIZE  
C  
 DATE ESTABLISHED  
13 FEB 87  
 DRAWING NUMBER  
99-13-288  
 SCALE  
Full  
 DATE  
11 DEC 98  
 SHEET 3 OF 4

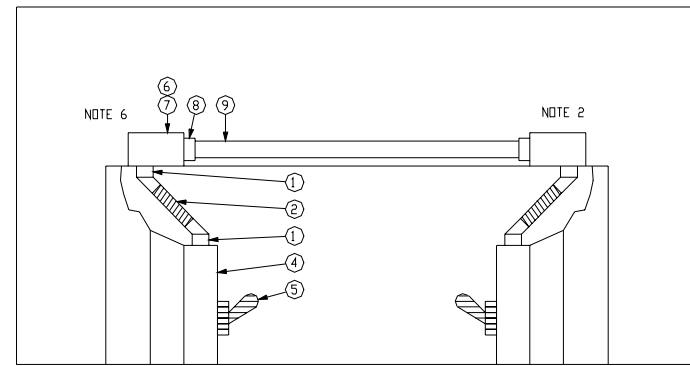
MOVED FROM CATEGORY 16,  
DELETED SHEET 4, AND RENUMBERED DRAWINGS 10 JAN 97 TMH  
ES99-003 ADDED VIEW A TO NOTE 3. 01 MAR99 JD



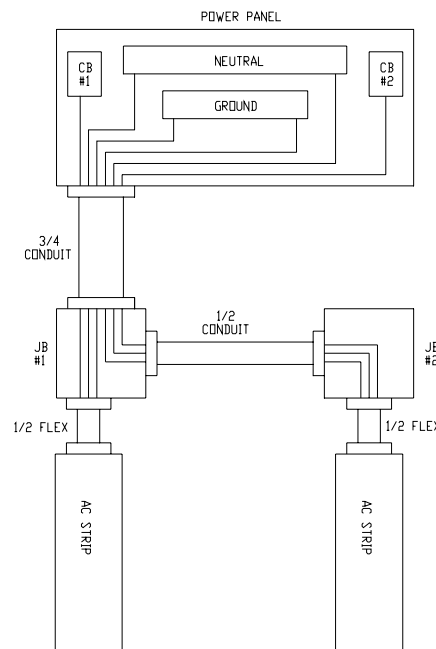
REAR VIEW



TOP VIEW



VIEW A



WIRING DETAILS

## NOTES: ALL DIMENSIONS IN INCHES (+/- 1/32)

1. USE THIS AS CENTER POINT FOR SIGNAL ENTRY. MFIS WILL DETERMINE DUCTING USED (ie., WIREMOLD, DUCT, ETC.).
2. SECOND JUNCTION BOX AND AC STRIP USED ONLY WHEN REQUIRED.
3. WIRE AND MOUNT SWITCH (AW SHEET 4 VIEW A. PLACE SWITCH ON WIRE ENTRY END.
4. IF TWO AC STRIPS ARE USED, DOUBLE QUANTITIES.
5. SEE SHEET 1 FOR MOUNTING PROCEDURES.
6. WHEN USING BOTH AC STRIPS WITH ONE SINGLE POWER DROP, CONNECT THE JUNCTION BOXES ON TOP OF THE RACK TOGETHER USING FIND #8 AND #9. EACH STRIP WILL BE SERVICED BY SEPARATE CIRCUITS (SEE WIRING DETAIL). PUNCH CENTER KNOCKOUT ON THE JUNCTION BOX CLOSEST TO THE POWER DROP FOR 3/4 INCH CONDUIT. MFIS WILL SPECIFY HARDWARE USED FROM JUNCTION BOX TO AC SOURCE.

## REQUIRED MATERIALS LIST

NOTE 4

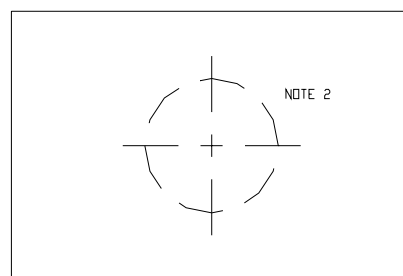
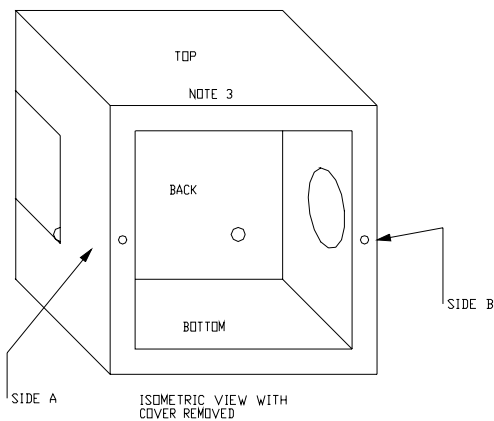
FIND ITEM	LI NO	DESCRIPTION	QTY
1.	01254	BOX CONNECTOR, 45 DEG, 1/2 IN.	2 EA
2.	01240	CONDUIT, FLEX STEEL, 1/2 IN.	AS REQ.
3.		DELETED	X
4.	00437	AC STRIP, 3 FT. LONG, 9 OUTLETS, 15 AMPS, 130VAC	1 EA
5.	00993	SWITCH, TOGGLE, DPST, 120V/20AMP	1 EA
6.	00490	CONDUIT HARDWARE, JUNCTION BOX 4"x2 1/8"	1 EA
7.	00489	2B CONDUIT HARDWARE, JUNCTION BOX COVER 4"x2 1/8"	1 EA
8.	00485	2B CONDUIT BOX CONNECTOR, 1/2 IN. STRAIGHT	1 EA
9.	00484	2B CONDUIT, 1/2 IN. EMT	AS REQ.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE Emcor 10 Series Overhead Power and Signal	
DRAFTSMAN Brewer	CHECKER D. J. Moore	SIZE C	DATE ESTABLISHED 13 FEB 87
ENGINEER D. D. Griffith	APPROVED D. Duff	DRAWING NUMBER 99-13-288	DRAWING CONTROL # 288
SCALE Full		DATE 1 MAR99	SHEET 4 of 4



MOVED FROM CATEGORY 11  
COMBINED DRAWING 019 AND 020

13 JAN 97 TMH  
20 NOV 98 JD

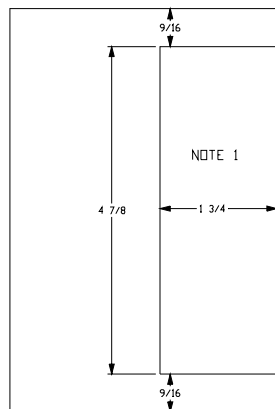


TOP VIEW

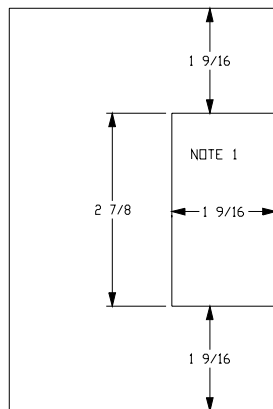
## NOTES:

DIMENSIONS ARE IN INCHES  
TOLERANCE IS +/- 1/32 INCH

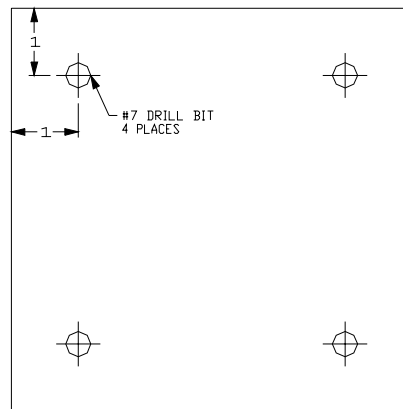
1. TOLERANCE FOR CUTOUT IS + 1/32. TOO SMALL A CUTOUT WOULD NOT ALLOW WIREMOLD TO FIT.
2. ENGINEER MAY REQUIRE MORE CUTOUTS. USE SIDE DESIGNATED BY FABRICATION REQUEST.
3. BOX IS LINE ITEM # 961.



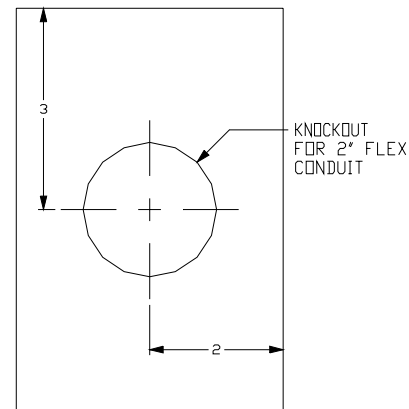
SIDE A VIEW FOR G4000



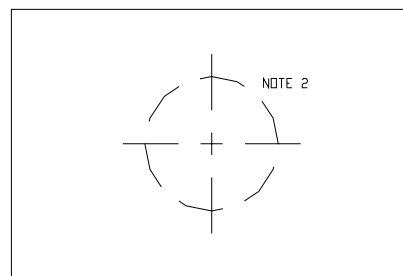
SIDE A VIEW FOR G3000



BACK VIEW

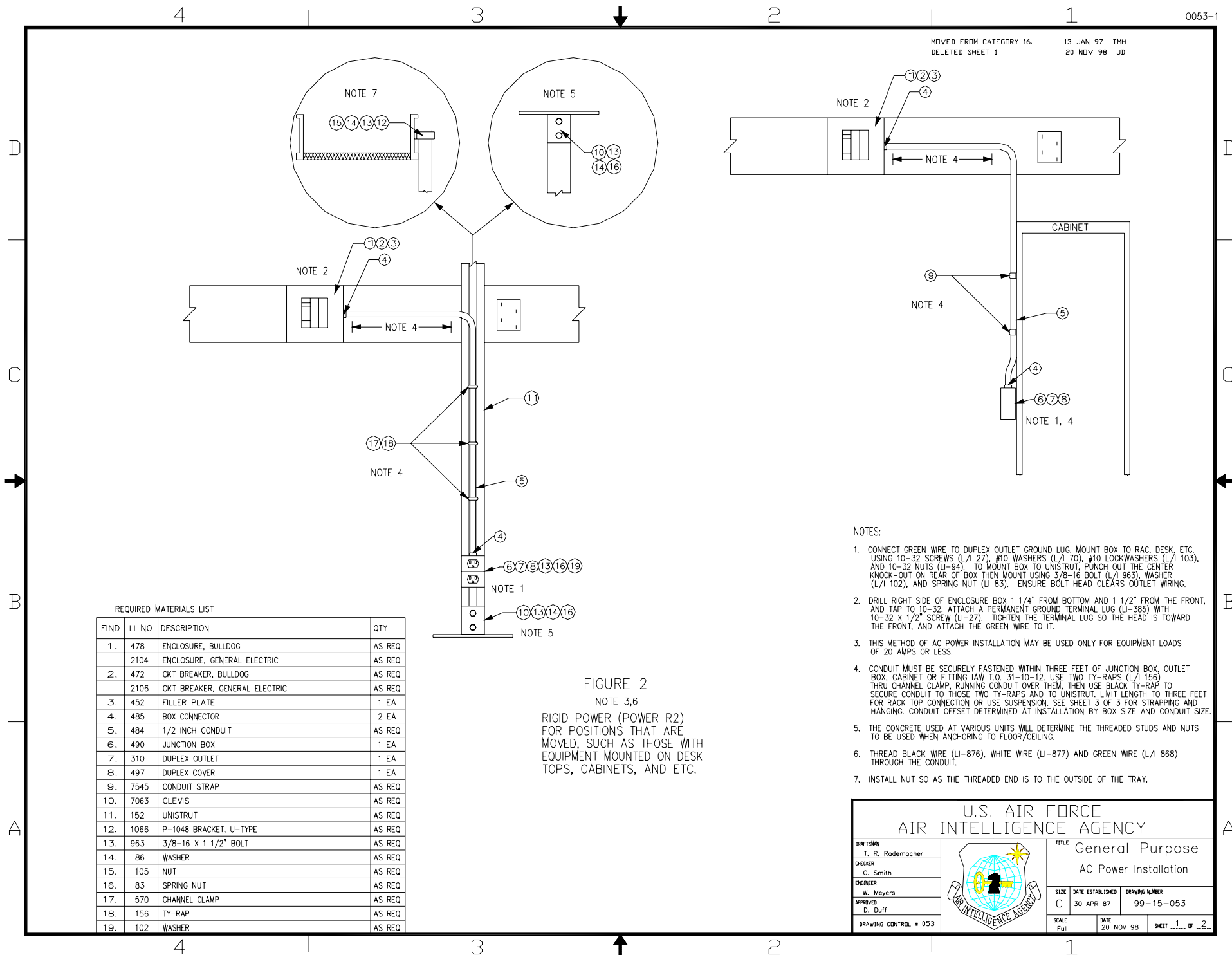


SIDE B VIEW



BOTTOM VIEW

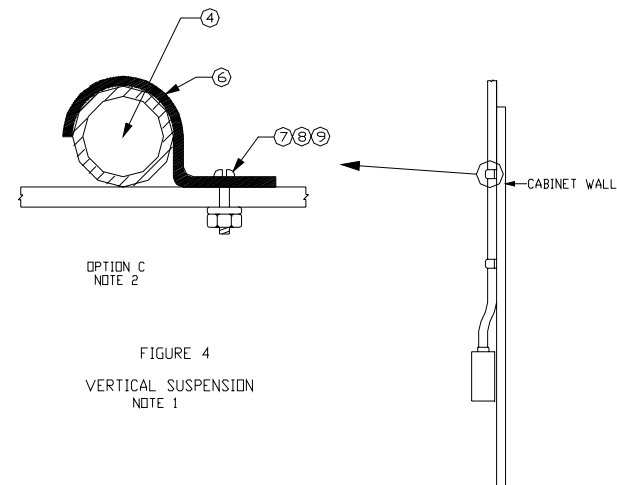
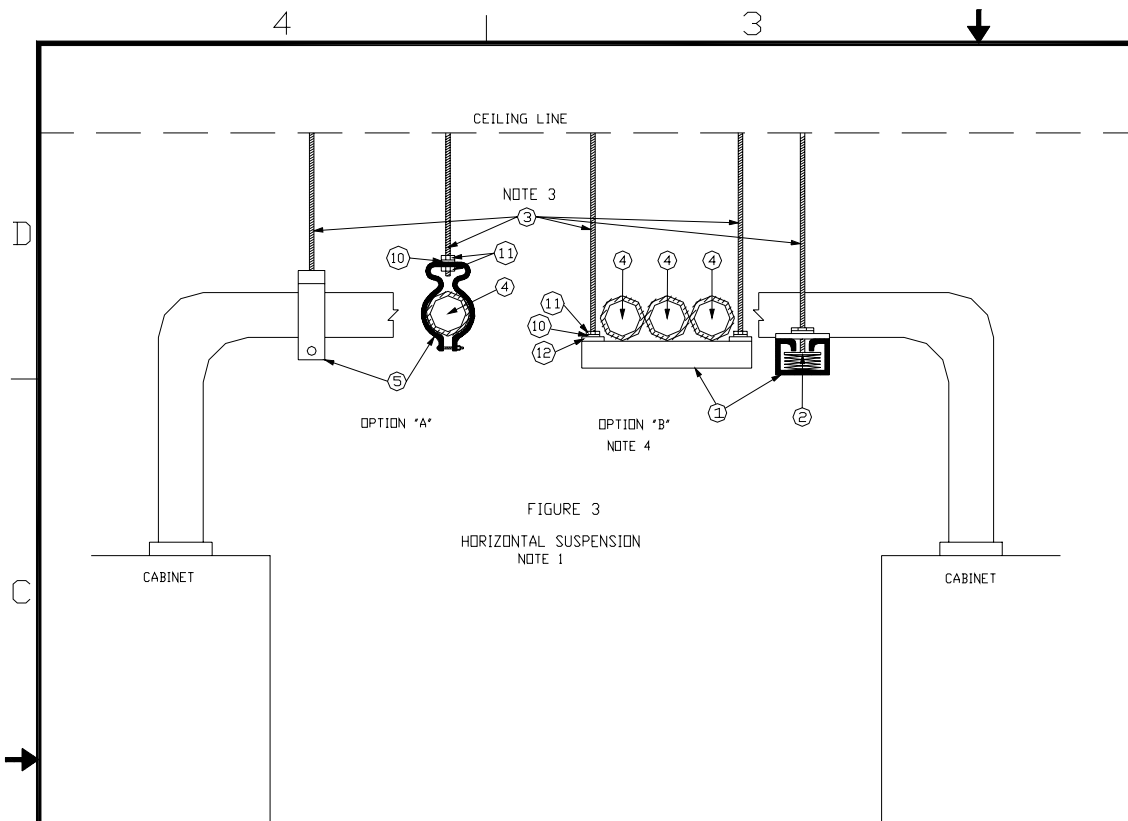
U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN D. J. Moore CHECKER R. S. Galus ENGINEER D. J. Moore APPROVED D. Duff DRAWING CONTROL # 019		TITLE Box Modification G3000/G4000 WIREMOLD SIZE C DATE ESTABLISHED 8 MAY 90 DRAWING NUMBER 99-15-019 SCALE Full DATE 20 NOV 98 SHEET 1 OF 1	



0053-2

MOVED FROM CATEGORY 16 AND  
UPDATED NOTES AND TABLE 1.  
DELETED SHEET 1

17 JAN 97 TMH  
20 NOV 98 JD



## NOTE:

- ENGINEER WILL DETERMINE CONDUIT, HANGER, AND STRAP SIZES REQUIRED. SEE TABLE 1 BELOW. SECURE AT INTERVALS IAW T.O. 31-10-12.
- PROPERLY ALIGN CONDUIT AND PLACE RETAINING STRAP AS SHOWN IN OPTION C. MARK AND DRILL CABINET WITH #7 BIT. BOLT RETAINING STRAP USING 10-32 BOLT, WASHER AND NUT.
- SEE 99-15-253, SHT 2 OF 7 FOR SUSPENSION METHODS.
- USE THIS METHOD WHEN SEVERAL CONDUIT RUNS MUST BE MADE BETWEEN RACKS. SECURE CONDUIT TO UNISTRUT USING LI-570.

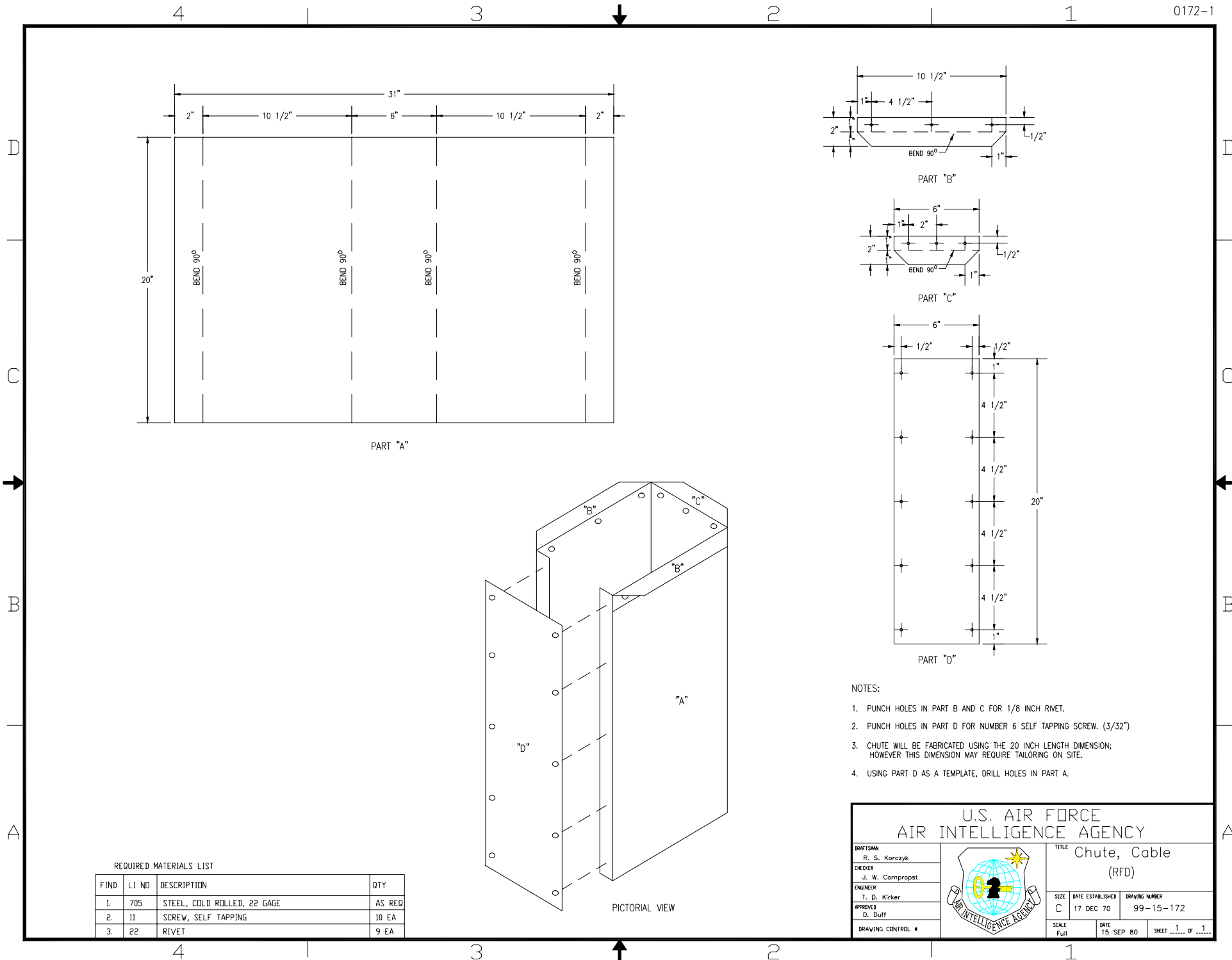
## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	152	UNISTRUT	AS REQ
2.	7194	SPRING NUT	AS REQ
3.	991	HANGER ROD	AS REQ
4.	NOTE	CONDUIT	AS REQ
5.	NOTE	CONDUIT HANGERS	AS REQ
6.	NOTE	CONDUIT STRAP	AS REQ
7.	70	#10 WASHERS	AS REQ
8.	94	10-32 NUTS	AS REQ
9.	31	10-32 SCREWS	AS REQ
10.	86	WASHER	AS REQ
11.	105	NUT	AS REQ
12.	102	WASHER	AS REQ

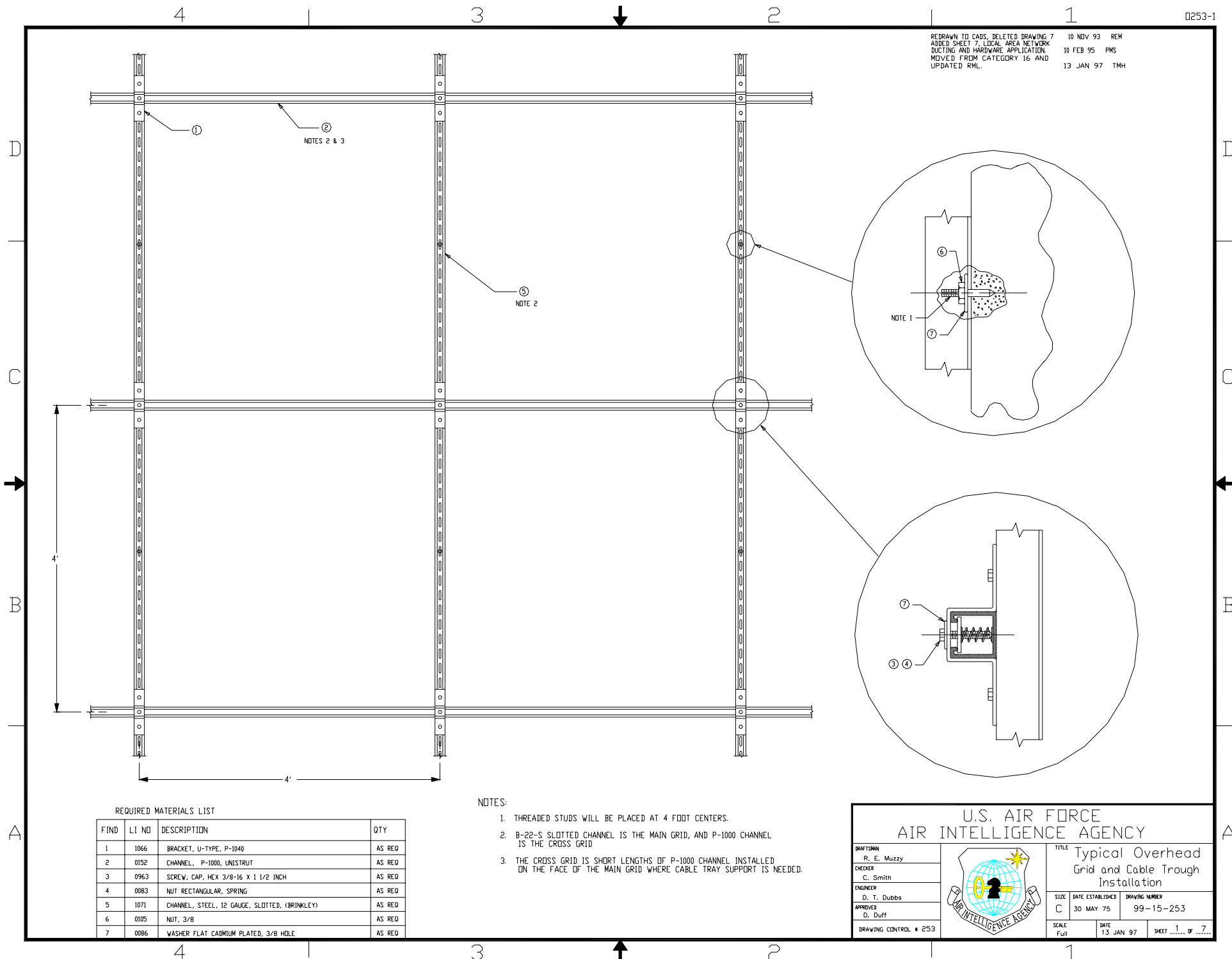
TABLE 1

DESCRIPTION	1/2"	3/4"	1"	1 1/2"	2"
CONDUIT	484	496	2049	7030	500
CONDUIT STRAP	7545	7075	7542	610	6116
CONDUIT HANGER	8141	7541	1102	1385	498

U.S. AIR FORCE AIR INTELLIGENCE AGENCY		General Purpose Conduit Support Installation	
DRAFTSMAN T R Rademacher	CHECKER C Smith	ENGINEER W Mayers	APPROVED J. Davis
DRAWING CONTROL # 053		DATE ESTABLISHED 30 Apr 87	DRAWING NUMBER 99-15-053
SCALE Full		DATE 20 NOV 98	SHEET 2 OF 2



0253-1



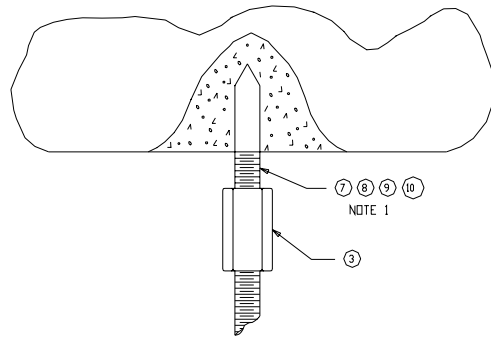
REDRAWN TO CADS, DELETED DRAWING 7  
MOVED FROM CATEGORY 16.10 NOV 93 REM  
14 JAN 97 TMH

FIG. 1

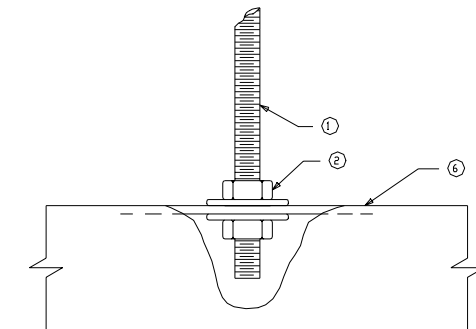


FIG. 2

## REQUIRED MATERIALS LIST

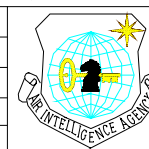
FIND	LI NO	DESCRIPTION	QTY
1	0991	ROD, THREAD, 3/8-16 X 48 INCHES	AS REQ
2	0105	NUT HEX STEEL 3/8-16	AS REQ
3	1937	COUPLING, 3/8 INCH, FOR USE WITH THREAD ROD	AS REQ
4	0102	WASHER, FLAT PLATE	AS REQ
5	0086	WASHER, FLAT CADMIUM PLATED	AS REQ
6	1071	CHANNEL, STEEL, 12 GAUGE, BRINKLEY, B-22-S	AS REQ
7	1072	STUD THREAD, 3/8-16 1/2" SHANK, 1' THREADED	AS REQ
8	1073	STUD THREAD, 3/8-16 1 1/4" SHANK, 1' THREADED	AS REQ
9	1074	STUD THREAD, 3/8-16 1 1/2" SHANK, 1' THREADED	AS REQ
10	1075	STUD THREAD, 3/8-16 1 3/4" SHANK, 1' THREADED	AS REQ

## NOTES:

1. THE CONCRETE USED AT THE SITE DETERMINES THE TREADED STUD TO BE USED.

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

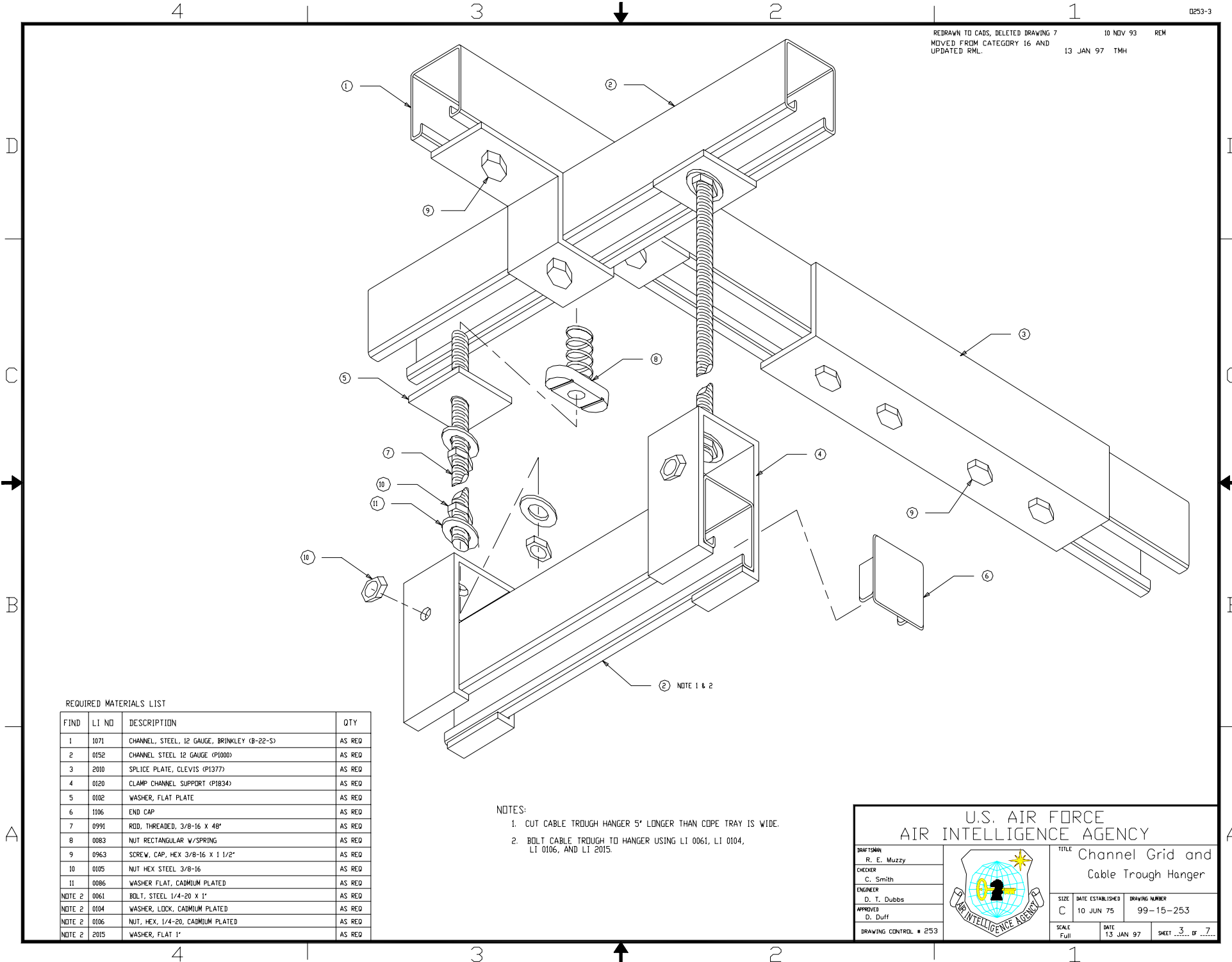
DRAFTSMAN  
R. E. Muzzy  
CHECKER  
D. Smith  
ENGINEER  
D. T. Dubbs  
APPROVED  
D. Duff  
DRAWING CONTROL # 253



TITLE  
Methods of  
Suspending Channel

SIZE C DATE ESTABLISHED 10 JUN 75 DRAWING NUMBER 99-15-253

SCALE Full DATE 14 JAN 97 SHEET 2 OF 7



REDRAWN TO CADS, DELETED DRAWING 7  
MOVED FROM CATEGORY 16 AND  
UPDATED RML.

10 NOV 93 REM  
13 JAN 97 TMH

0253-3

REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1	1071	CHANNEL, STEEL, 12 GAUGE, BRINKLEY (B-22-S)	AS REQ
2	0152	CHANNEL STEEL 12 GAUGE (P1000)	AS REQ
3	2010	SPLICE PLATE, CLEVIS (P1377)	AS REQ
4	0120	CLAMP CHANNEL SUPPORT (P1834)	AS REQ
5	0102	WASHER, FLAT PLATE	AS REQ
6	1106	END CAP	AS REQ
7	0991	ROD, THREADED, 3/8-16 X 48"	AS REQ
8	0083	NUT RECTANGULAR W/SPRING	AS REQ
9	0963	SCREW, CAP, HEX 3/8-16 X 1 1/2"	AS REQ
10	0105	NUT HEX STEEL 3/8-16	AS REQ
11	0086	WASHER FLAT, CADMIUM PLATED	AS REQ
NOTE 2	0061	BOLT, STEEL 1/4-20 X 1"	AS REQ
NOTE 2	0104	WASHER, LOCK, CADMIUM PLATED	AS REQ
NOTE 2	0106	NUT, HEX, 1/4-20, CADMIUM PLATED	AS REQ
NOTE 2	2015	WASHER, FLAT 1"	AS REQ

- NOTES:
- CUT CABLE TROUGH HANGER 5' LONGER THAN COPE TRAY IS WIDE.
  - BOLT CABLE TROUGH TO HANGER USING LI 0061, LI 0104, LI 0106, AND LI 2015.

DRAFTSMAN R. E. Muzzy		TITLE Channel Grid and Cable Trough Hanger	
CHECKER C. Smith		SIZE C	
ENGINEER D. T. Dubbs		DATE ESTABLISHED 10 JUN 75	
APPROVED D. Duff		DRAWING NUMBER 99-15-253	
DRAWING CONTROL # 253		SCALE Full	
		DATE 13 JAN 97	
		SHEET 3 OF 7	

4

3

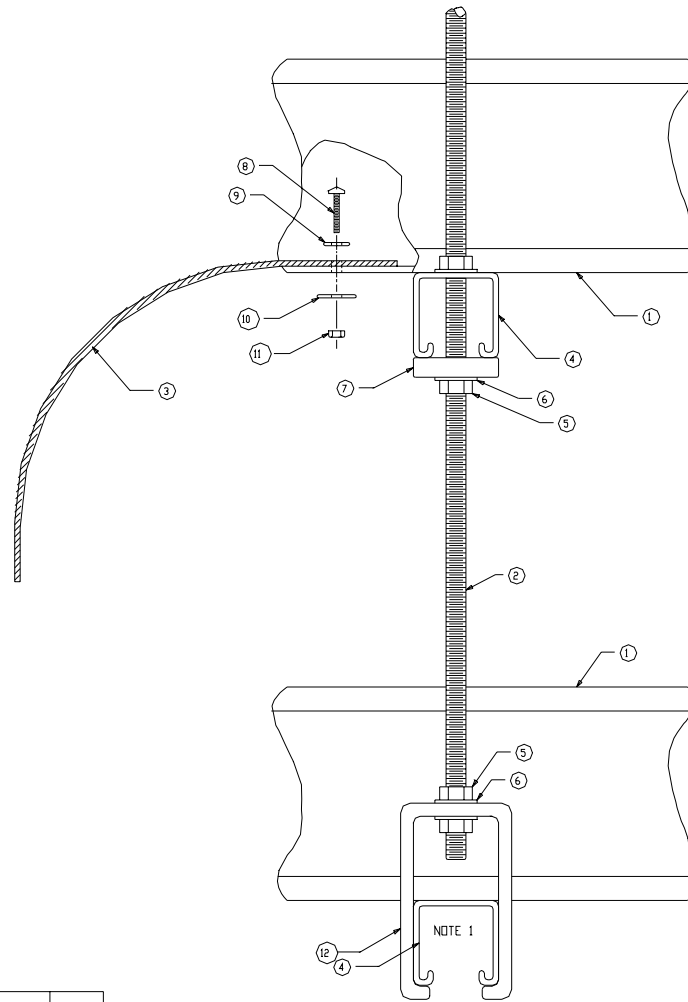
2

1

0253-4

REDRAWN TO CABS, DELETED DRAWING 7  
MOVED FROM CATEGORY 16.

10 NOV 93 REM  
14 JAN 97 TMH



## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1	4022	TROUGH, CABLE, ALUM. STR. 12" X 12" (TYPICAL)	AS REQ
2	0991	ROD, THREADED, 3/8-16 X 48"	AS REQ
3	4011	DROP-OUT, 5" RADIUS X 12" WIDTH (TYPICAL)	AS REQ
4	1071	CHANNEL, STEEL, 12 GAUGE	AS REQ
5	0105	NUT HEX, STEEL, FOR 3/8-16 BOLTS	AS REQ
6	0086	WASHER, FLAT, CADMIUM PLATED, 3/8 HOLE	AS REQ
7	0102	WASHER, FLAT PLATE, UNISTRUT 7/16 HOLE	AS REQ
8	0031	SCREW, MACHINE, 10-32 X 7/8	AS REQ
9	0070	WASHER, FLAT, STEEL, FOR #10 SCREW	AS REQ
10	2015	WASHER, FLAT, 1"	AS REQ
11	0094	NUT HEX, FOR 10-32 SCREW	AS REQ
12	0120	CLAMP CHANNEL SUPPORT, PAR METAL	AS REQ
NOTE 1	1106	END CAPS	AS REQ

## NOTES:

1. CUT SECOND CABLE TROUGH HANGER 5" LONGER THEN COPE TRAY IS WIDE.  
END CAPS (LI 1106) REQUIRED BUT NOT SHOWN.

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R. E. Muzzy  
CHECKER  
C. Smith  
ENGINEER  
D. T. Dubbs  
APPROVED  
D. Duff  
DRAWING CONTROL # 253



TITLE  
Double Cable  
Trough Installation

SIZE C DATE ESTABLISHED 10 JUN 75 DRAWING NUMBER 99-15-253

SCALE Full DATE 14 JAN 97 SHEET 4 OF 7

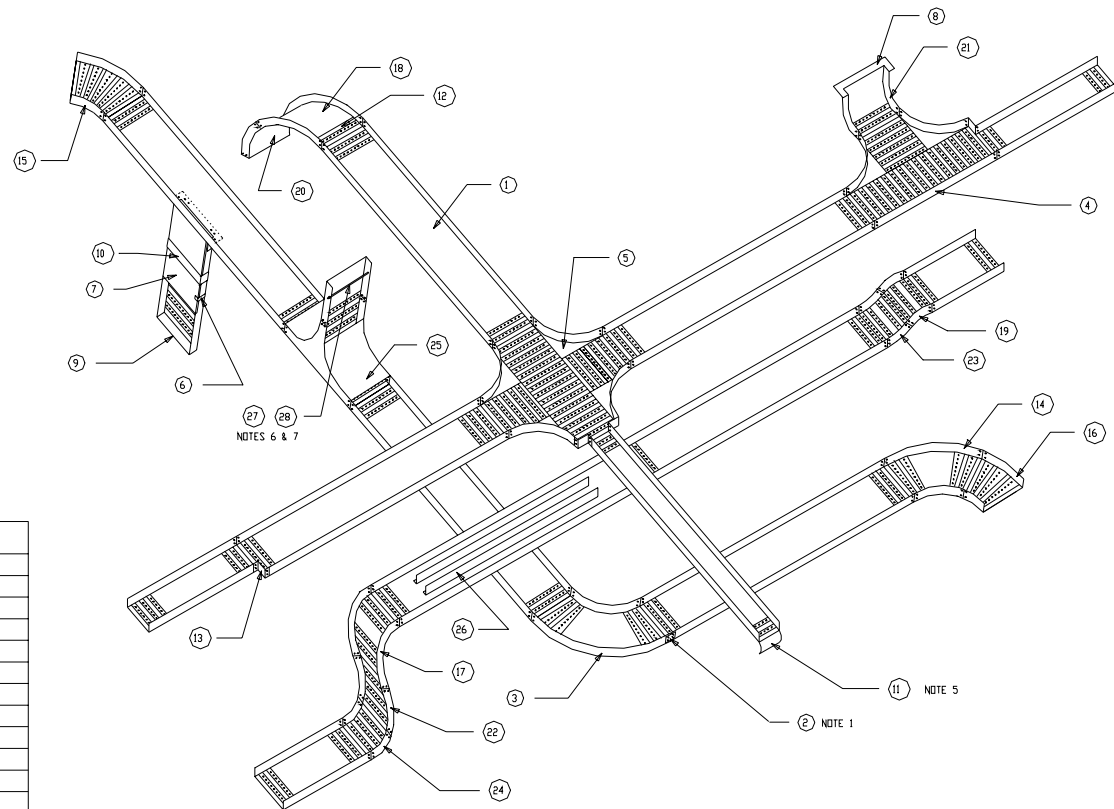


0253-5

REDRAWN TO CABS, DELETED DRAWING 7 24 NOV 93 REM  
 MOVED FROM CATEGORY 16 AND  
 UPDATED NOTES. 14 JAN 97 TMH

## NOTES:

1. ALL COPE TROUGH SECTION COME WITH THE REQUIRED CONNECTOR HARDWARE (LI 4213) FOR INSTALLATION. HOWEVER, CONNECTOR HARDWARE FOR FIELD CUTS MUST BE ORDERED.
2. FIELD CUTS ARE JOINED USING RML ITEM 13.
3. ITEMS 14 - 25 ARE AVAILABLE FROM T. J. COPE, INC.
4. THE RADIUS FOR ITEMS 14 - 25 IS 12".
5. SEE 99-15-292 FOR ATTACHING DROPOUT TO COPE TROUGH.
6. SEE 99-15-337 FOR FABRICATION INSTRUCTIONS.
7. REFER TO T. O. 31-10-6 FOR ADDITIONAL INFORMATION.



## REQUIRED MATERIALS LIST

FIND	LINE ITEM NUMBER			DESCRIPTION
	12" WIDTH	18" WIDTH	24" WIDTH	
1	4022	4008	4009	TROUGH, CABLE, ALUMINUM, 12' LONG
2	4213	4213	4213	CONNECTOR, SPLICE, STANDARD, ALUMINUM
3	4027	4035	4037	ELBOW, 90 DEG, ALUMINUM
4	4031	4044	4046	TEE, HORIZONTAL, ALUMINUM
5	4032	4054	4056	CROSS, HORIZONTAL, ALUMINUM
6	4038	4038	4038	COVER, CLIP, ALUMINUM
7	4024	4218	4036	COVER, SOLID, ALUMINUM, 12' LONG
8	4028	4216	4033	BOX CONNECTOR, ALUMINUM
9	4030	4183	4034	BLIND-END, ALUMINUM
10	4026	4220	4041	COVER, CONNECTOR CLAMP, ALUMINUM
11	4011	4012	4013	DROP-OUT, 9" RAD, ALUMINUM
12	4025	4042	4043	BEDPLATE SPLICE, ALUMINUM
13	4040	4099	4086	REDUCER, CONNECTOR, ALUMINUM
MANUFACTURER'S PART NUMBER				
	12" WIDTH	18" WIDTH	24" WIDTH	
14	234-126F-12-V	234-186G-12-V	234-246F-12-V	60 DEGREE ELBOW
15	234-124F-12-V	234-184F-12-V	234-244F-12-V	45 DEGREE ELBOW
16	234-123F-12-V	234-183F-12-V	234-243F-12-V	30 DEGREE ELBOW
17	234-1290-12-V	234-1890-12-V	234-2490-12-V	90 DEGREE OUTSIDE RISER
18	234-1260-12-V	234-1860-12-V	234-2460-12-V	60 DEGREE OUTSIDE RISER
19	234-1240-12-V	234-1840-12-V	234-2440-12-V	45 DEGREE OUTSIDE RISER
20	234-1230-12-V	234-1830-12-V	234-2430-12-V	30 DEGREE OUTSIDE RISER
21	234-1291-12-V	234-1891-12-V	234-2491-12-V	90 DEGREE INSIDE RISER
22	234-1261-12-V	234-1861-12-V	234-2461-12-V	60 DEGREE INSIDE RISER
23	234-1241-12-V	234-1841-12-V	234-2441-12-V	45 DEGREE INSIDE RISER
24	234-1231-12-V	234-1831-12-V	234-2431-12-V	30 DEGREE INSIDE RISER
25	234-12VT-12-V	234-18VT-12-V	234-24VT-12-V	VERTICAL TEE
26	34-01SB-12	34-01SB-12	34-01SB-12	BARRIER STRIP 12'
27	SEE NOTE 6			LACING BAR
28	SEE NOTE 7			BUTTING BRACKET

# U.S. AIR FORCE AIR INTELLIGENCE AGENCY

## Cable Trough System

DRAFTSMAN  
R. E. Muzzy  
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R. D. Suttles  
APPROVED  
D. Duff  
DRAWING CONTROL # 253



SIZE C DATE ESTABLISHED 10 JUN 75 DRAWING NUMBER 99-15-253  
 SCALE Full DATE 14 JAN 97 SHEET 5 OF 7

0253-6

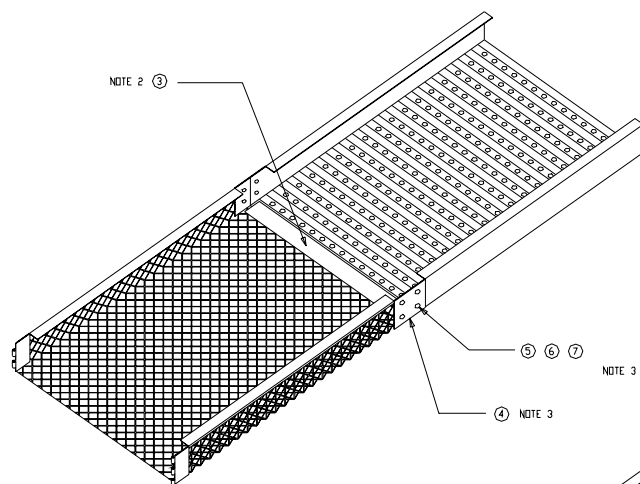
REDRAWN TO CADS, DELETED DRAWING 7  
MOVED FROM CATEGORY 16.24 NOV 93 REM  
14 JAN 97 TMH

FIG. 3

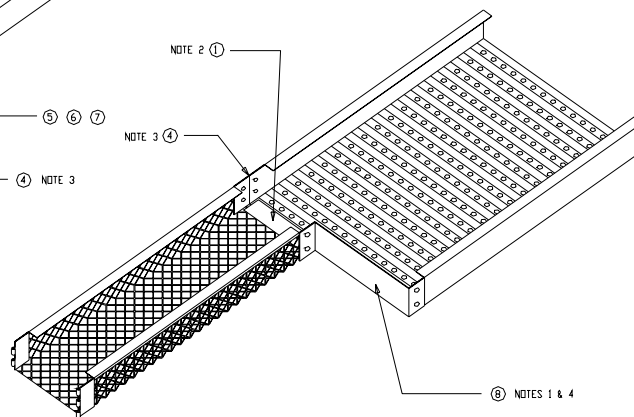


FIG. 4

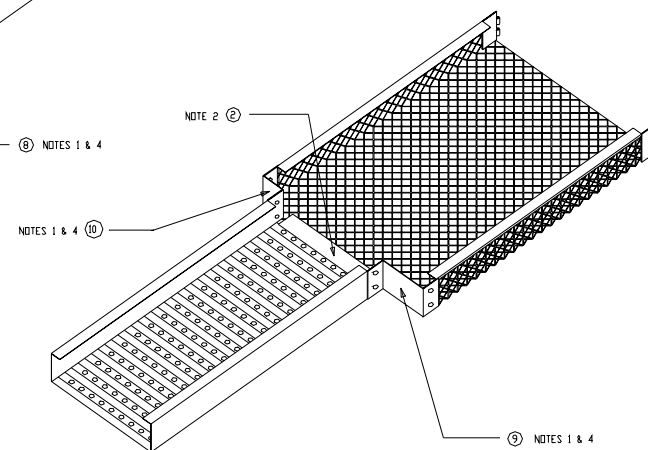


FIG. 5

## REQUIRED MATERIALS LIST

FIND	LT NO	DESCRIPTION	QTY
1.	4025	BEDPLATE SPLICE, ALUMINUM, 12" LONG	AS REQ
2.	4042	BEDPLATE SPLICE, ALUMINUM, 18" LONG	AS REQ
3.	4043	BEDPLATE SPLICE, ALUMINUM, 24" LONG	AS REQ
4.	4213	CONNECTOR, SPLICE, STANDARD, ALUMINUM	AS REQ
5.	7067	SCREW, MACHINE, PHILLIPS, #20, 1/4 X 1/2	AS REQ
6.	0106	NUT 1/4 - #20 HEX, CADMIUM PLATED	AS REQ
7.	0104	WASHER, LOCK, FOR 1/4" BOLT CADMIUM PLATED	AS REQ
8.	4040	REDUCER, CONNECTOR, ALUMINUM, 12" LONG	AS REQ
9.	4099	REDUCER, CONNECTOR, ALUMINUM, 6" LONG	AS REQ
10.	4086	REDUCER, CONNECTOR, ALUMINUM, 3" LONG	AS REQ

## NOTES:

1. LENGTH OF REDUCER BRACKET DETERMINED BY WIDTH OF COPE TROUGH AND METHOD OF JOINING.
2. TRIM BACK THE MESH ON OLD COPE TROUGH SO THAT WHEN COUPLER IS INSERTED, IT WILL BE FLUSH WITH THE SIDES OF THE OLD COPE TROUGH.
3. ALIGN COPE TROUGH SO THAT THE BOTTOM EDGES ARE FLUSH. USING COPE SPLICE OR SPLICE BRACKET AS A TEMPLATE TO MARK PLACE FOR HOLES TO BE DRILLED. THE HOLE SIZE IS 5/16, THEN USING ITEMS 4, 5, OR 6 TO ATTACH SPLICE AND REDUCER BRACKET.
4. INSTALL REDUCER BRACKET ON THE INSIDE EDGE OF THE NARROWER TROUGH, AND THE OUTSIDE EDGE OF THE WIDER TROUGH TO PREVENT SNAGGING CABLES.

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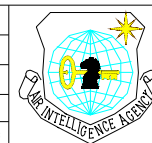
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R. E. Muzzy

CHECKER  
C. Smith

ENGINEER  
R. D. Suttles

APPROVED  
D. Duff

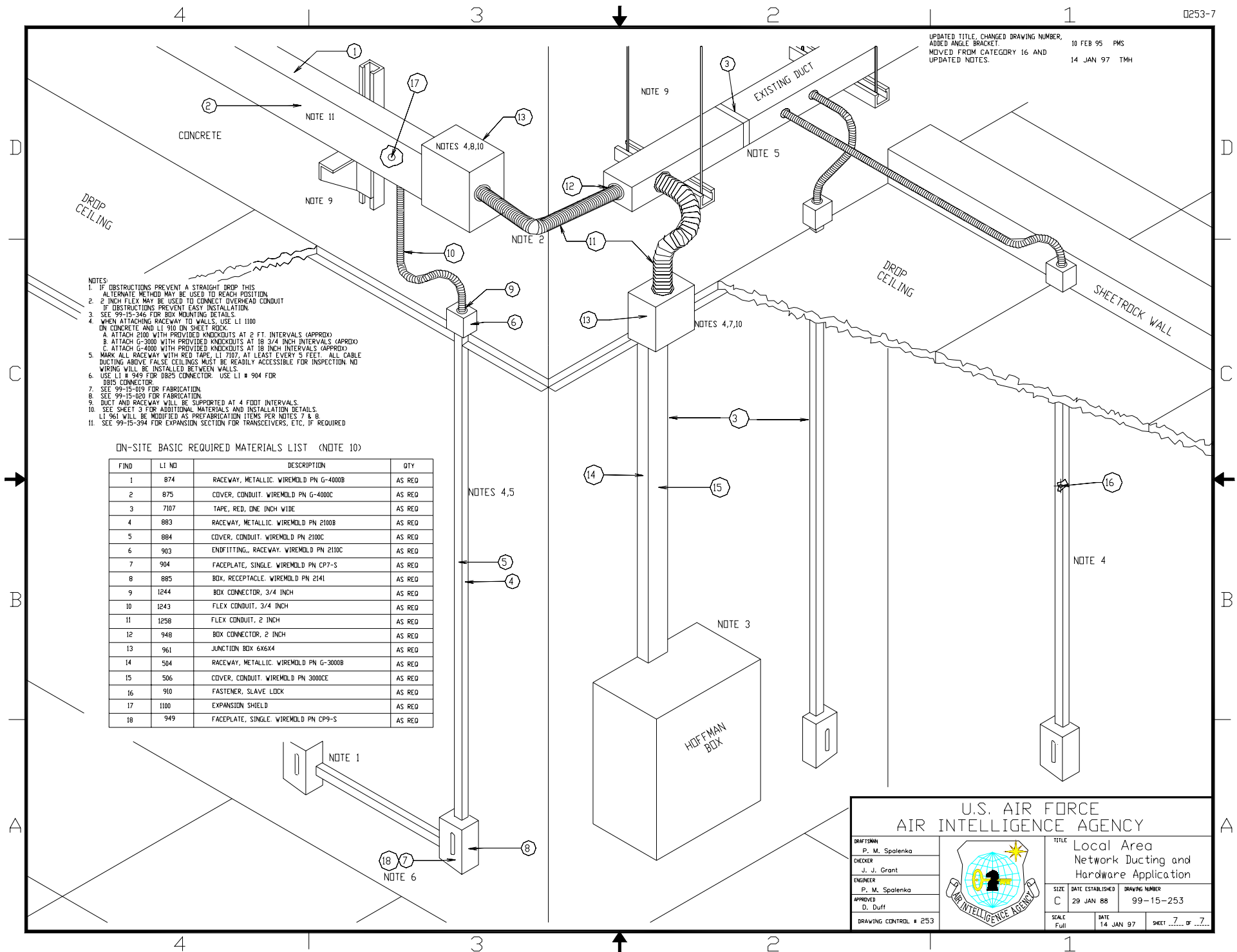
DRAWING CONTROL # 253

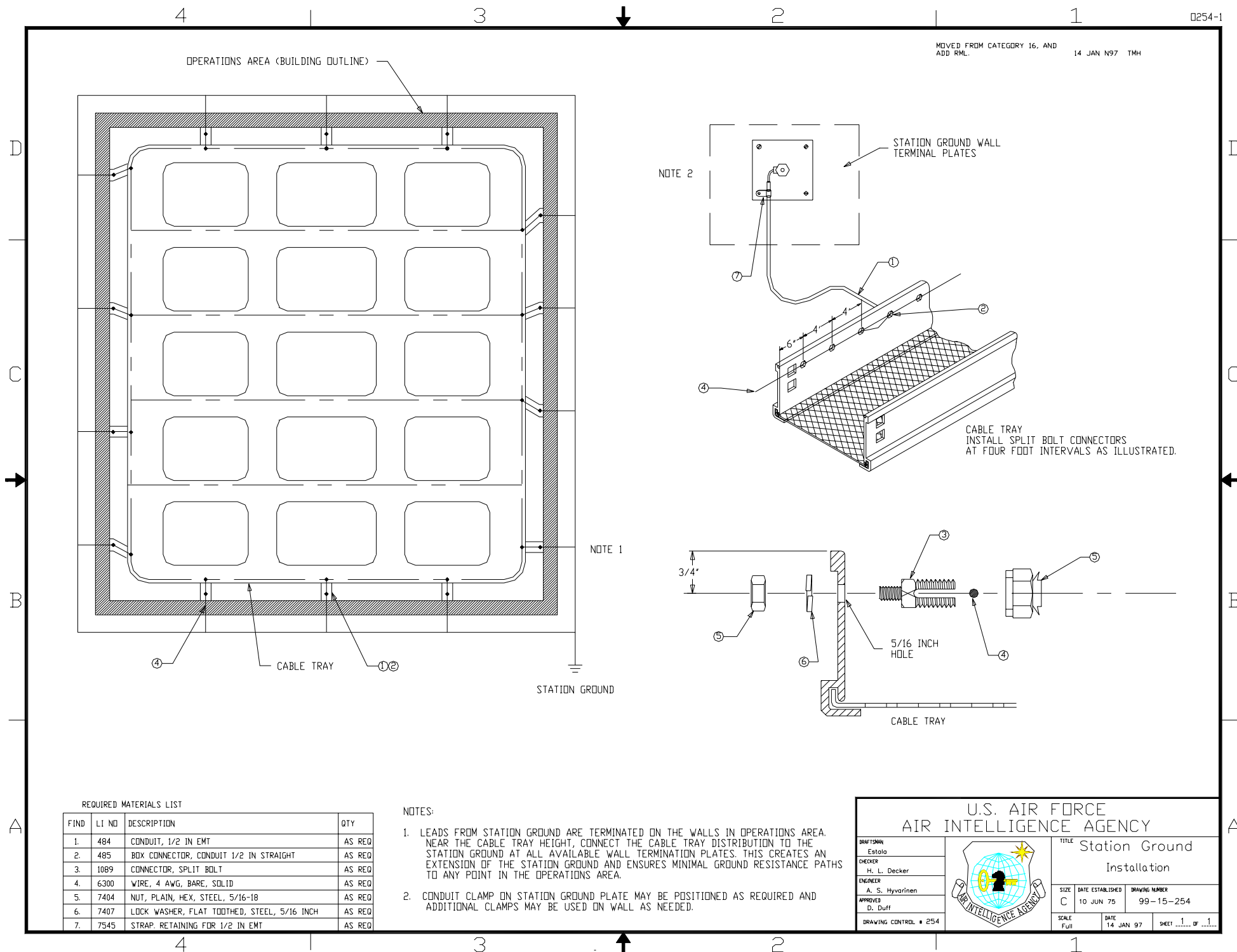


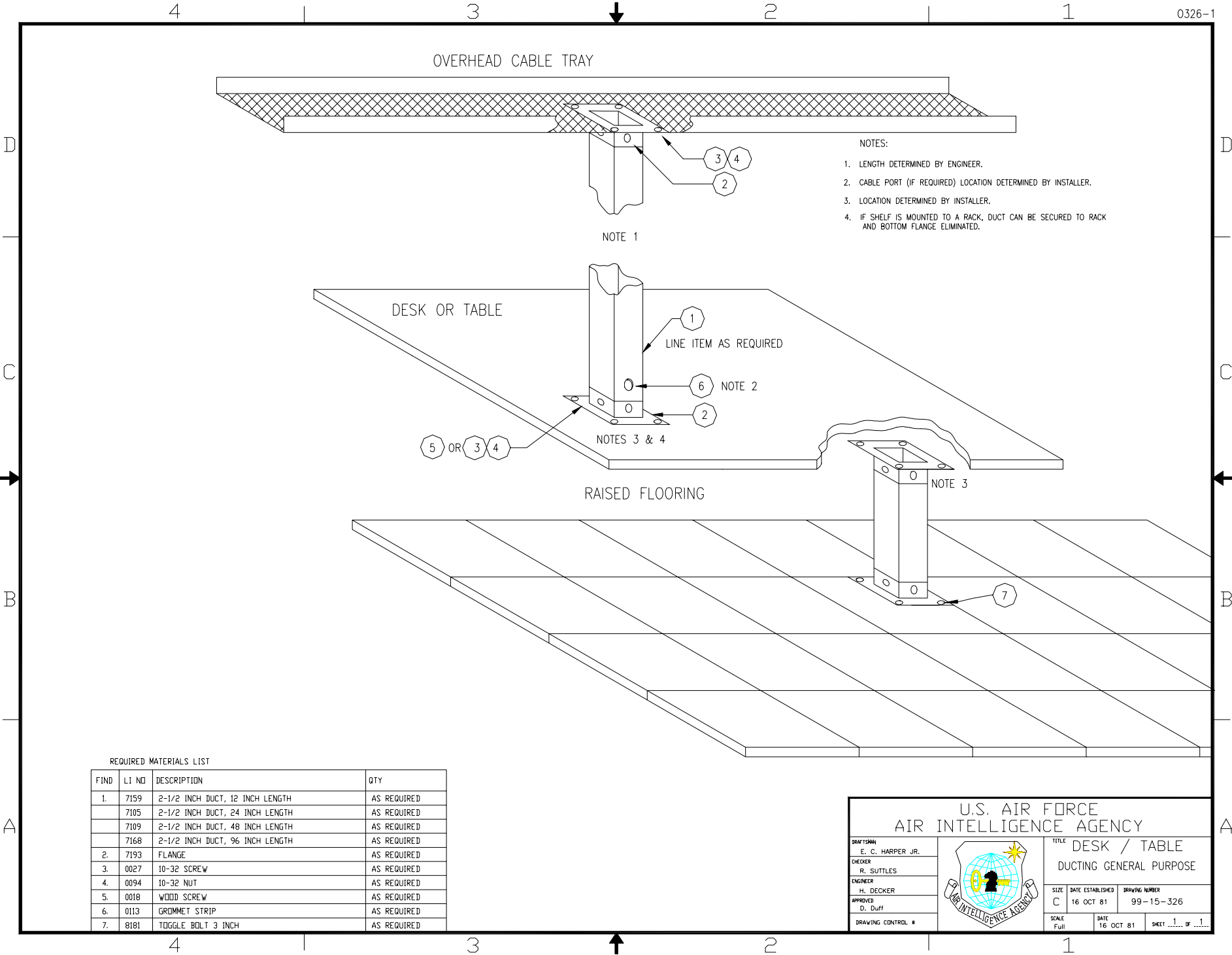
TITLE  
Joining New Cope  
Trough to Old Cope Trough

SIZE C DATE ESTABLISHED 15 JUL 80 DRAWING NUMBER 99-15-253

SCALE Full DATE 14 JAN 96 SHEET 6 OF 7

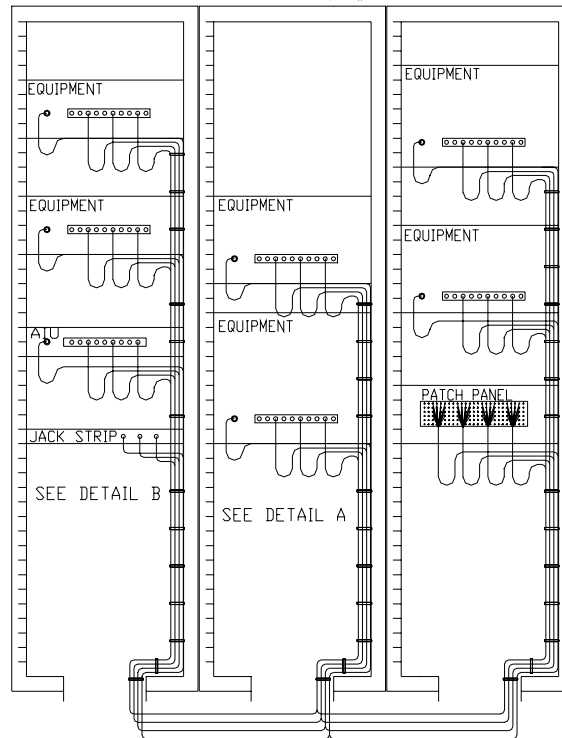




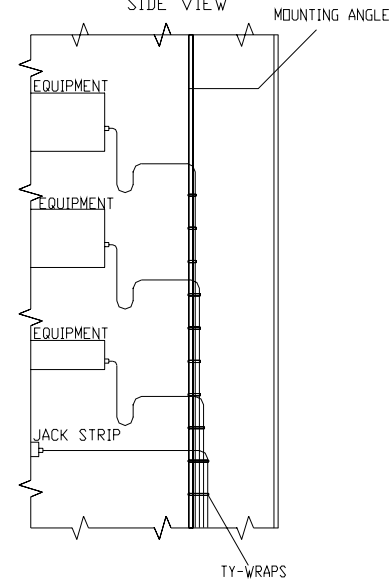


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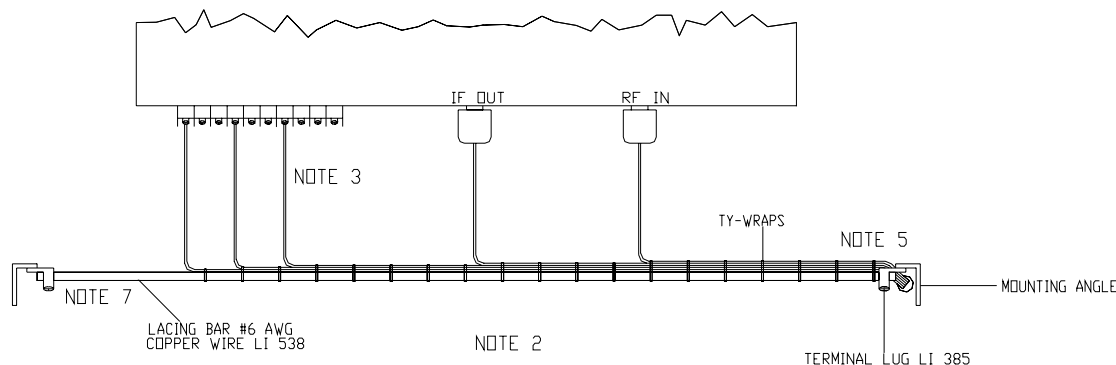
FIG 1  
NOTES 1,2,4,6  
REAR VIEW



DETAIL B  
SIDE VIEW



DETAIL A



# NOTES:

ALL DIMENSIONS IN INCHES (+/- 1/32 INCHES)

1. RADIUS OF ALL CABLE BENDS WILL BE AT LEAST 3 TIMES THE CABLE BUNDLE DIAMETER IAW T.O. 31-10-13.
2. LACING BARS WILL BE USED FOR ALL HORIZONTAL CABLE FANNING AND MAINTENANCE LOOPS WILL BE PROVIDED. FOR SLIDE MOUNTED EQUIPMENT ALLOW ENOUGH CABLE FOR EXTRACTION OF EQUIPMENT. FOR ALL OTHER EQUIPMENT ALLOW A MINIMUM 5 OR 6 INCH MAINTENANCE LOOP FOR CABLE REPAIR AND CONNECTOR REPLACEMENT. REFER TO T.O. 31-10-2, 31-10-13, AND 31-10-14 FOR SPECIFIC DETAILS.
3. FAN OUT CABLES IAW T.O. 31-10-2.
4. ROUTE ALL UNDER-FLOOR CABLES PARALLEL TO POSITION OR AT 90 DEGREES TO POSITION. SEPARATE POWER CABLE RUNS FROM SIGNAL AND CONTROL CABLE RUNS. WHEN POWER RUNS MUST CROSS SIGNAL/CONTROL CABLES, THEY WILL CROSS AT 90 DEGREES.
5. LACE ALL CABLES WITH TY-WRAPS ON SPACING OF 4.75 INCHES MAX. WITH TIE-BUCKLES AT 9.5 INCHES. REFER TO T.O. 31-10-2 AND 31-10-13 FOR SPECIFIC DETAILS.
6. SEE 99-06-331 FOR RAISED FLOOR CUTOUT AND COOLING DETAILS.
7. STRAIGHTEN 6 AWG WIRE BY PLACING ONE END OF A 24 FOOT LENGTH IN A VICE AND THE OTHER END IN A DRILL. TURN THE DRILL ON LONG ENOUGH TO STRAIGHTEN THE WIRE THEN CUT THE WIRE TO LENGTH.

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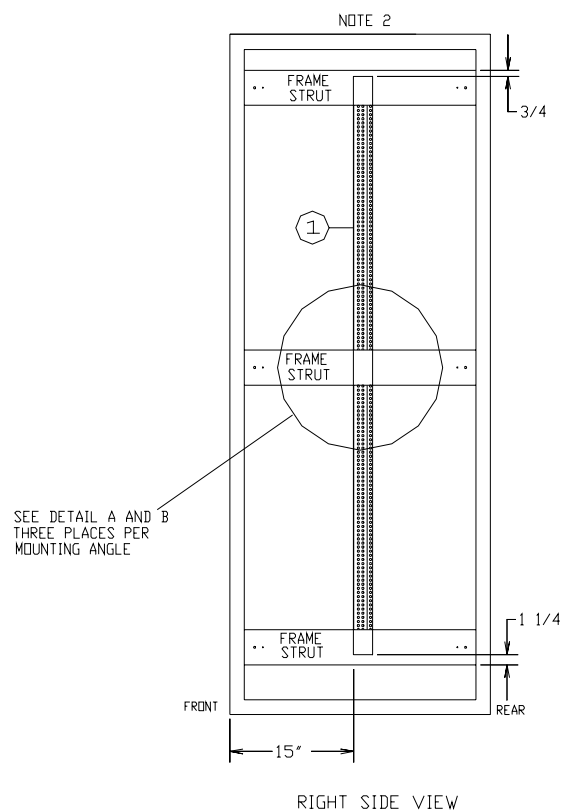
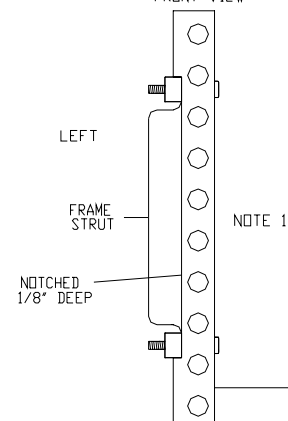
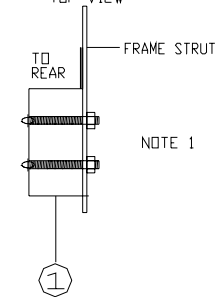
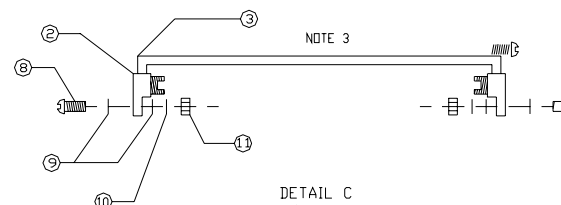
DRAFTSMAN  
W. O'Connor  
CHECKER  
F. W. Wood  
ENGINEER  
W. O'Connor  
APPROVER  
J. Davis  
DRAWING CONTROL # 344



TITLE  
EMCOR 10 Series  
Cable Routing Details  
SIZE  
C  
DATE ESTABLISHED  
10 apr 89  
DRAWING NUMBER  
99-15-344  
SCALE  
Full  
DATE  
11 JUL 97  
SHEET  
1 of 2

0344-2

FIGURE 1

DETAIL A  
FRONT VIEWDETAIL B  
TOP VIEWDETAIL C  
STRAIN RELIEF BAR

NOTES: ALL DIMENSIONS IN INCHES (+/- 1/32 INCHES)

- ORDER ONE ADDITIONAL PAIR OF MOUNTING ANGLES PER RACK. (RACK IS FURNISHED WITH FRONT AND REAR MOUNTING ANGLES.) THE ADDITIONAL MOUNTING ANGLES WILL BE MOUNTED 15 INCHES FROM THE FRONT OF THE RACK AND USED FOR LACING THE CABLES. THE ADDITIONAL MOUNTING ANGLES ARE TO BE NOTCHED 1/8" DEEP SO THAT THEY MOUNT FLUSH WITH THE FRAME STRUTS. USE THE SCREWS AND CLIP NUTS SUPPLIED WITH THE RACK TO SECURE THE MOUNTING ANGLES TO THE FRAME STRUTS.
- FOR SHELF MOUNTING BRACKETS, POWER STRIPS, RACK MOUNTING & GROUNDING, AND ATTACHING RACKS TOGETHER SEE 99-13-288. IF EXTRA OUTLETS ARE NEEDED USE THE FOUR FOOT AC PLUG STRIP LI 835,(13 OUTLETS),IN PLACE OF THE THREE FOOT AC PLUG STRIP LI 437,(9 OUTLETS), ON THE 99-13-288 DRAWING.
- AFTER BENDING, INSTALL TERMINAL LUGS (L/I 385) ON SIDES AND MEASURE DISTANCE BETWEEN THEM. CUT WIRE (L/I 538) TO FIT.

## REQUIRED MATERIALS LIST

FIND ITEM	LINE ITEM	QTY.	DESCRIPTION	REMARKS
1.	3042	AS REQ	MOUNTING ANGLE	NOTE 1
2.	385	AS REQ	TERMINAL LUG	SEE SHEET 1
3.	538	AS REQ	#6 AWG COPPER WIRE	SEE SHEET 1
4.	132	AS REQ	TY-WRAPS	SEE SHEET 1
5.	156	AS REQ	TY-WRAPS	SEE SHEET 1
6.	157	AS REQ	TY-WRAPS	SEE SHEET 1
7.	149	AS REQ	TIE BUCKLE	NOT SHOWN
8.	27	2 EA	SCREW, 10-32 X 1/2 PANHEAD	
9.	70	4 EA	WASHER, FLAT	
10.	103	2 EA	WASHER, LOCK	
11.	94	2 EA	NUT, HEX FOR 10-32 SCREW	

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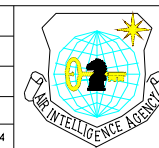
DRAFTSMAN  
W. O'Connor

CHECKER  
F. W. Wood

ENGINEER  
W. O'Connor

APPROVER  
D. Duff

DRAWING CONTROL # 344



TITLE  
EMCOR 10 Series  
Rack RFD Preparation

SIZE  
C

DATE ESTABLISHED  
21 FEB 89

DRAWING NUMBER  
99-15-344

SCALE  
Full

DATE  
15 JAN 97

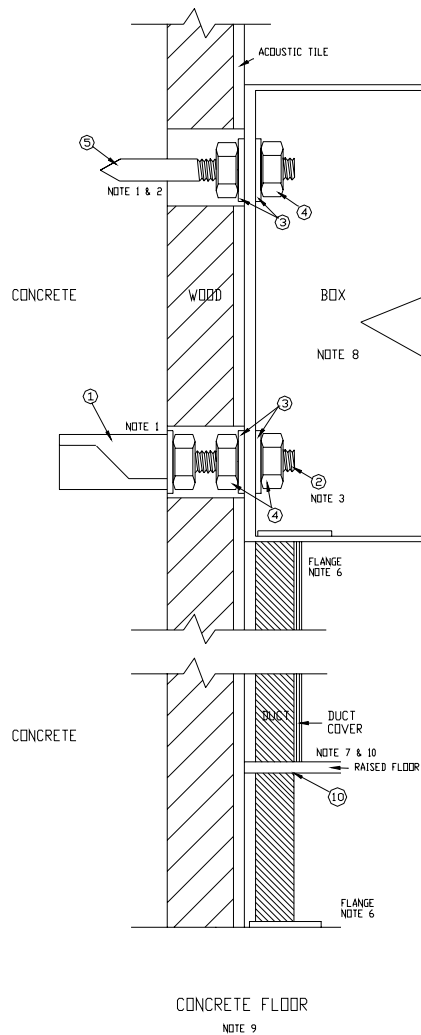
SHEET  
2 OF 2

0346-1

REDREW TO CADD, UPDATED RML  
MOVED FROM CATEGORY 178 MAR 93 CCS  
15 JAN 97 TMH

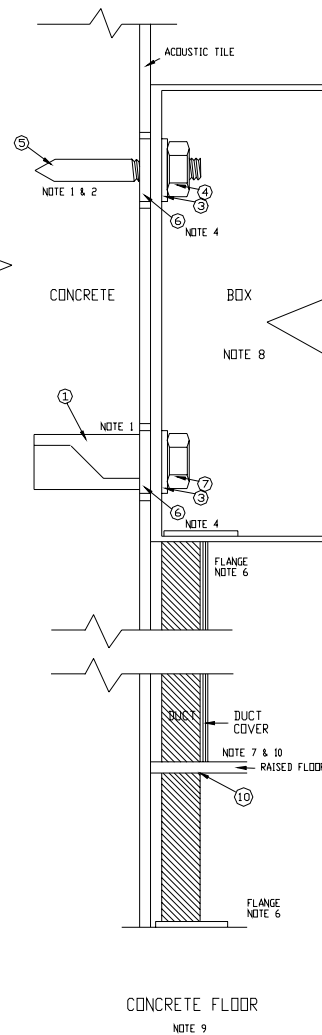
DETAIL A

CONCRETE &amp; WOOD WALL



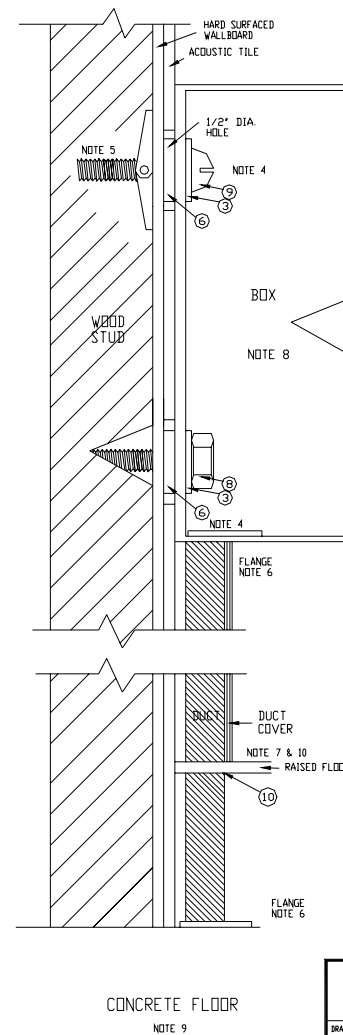
DETAIL B

CONCRETE WALL



DETAIL C

WOOD WALL



## NOTES:

1. THREADED STUD MAY BE USED IN PLACE OF EXPANSION SHIELDS, DEPENDING ON TYPE OF CONCRETE USED IN WALL. TYPE AND THICKNESS OF FALSE WALL WILL DETERMINE SIZE OF STUD USED.
2. IF FALSE WALL MATERIAL IS TOO THICK FOR THREADED STUD, LI 991 MAY BE USED TO EXTEND THREADS INTO BOX.
3. CUT ROD SO NO MORE THAN 1/4" OF ROD PROTRUDES BEYOND NUT IN BOX.
4. IF SOFT ACOUSTIC TILES ARE USED AS WALL COVERING, CUT A PIECE OF CONDUIT (LI 484) THE THICKNESS OF THE TILE TO USE AS A SPACER TO PREVENT THE BOX FROM DAMAGING THE WALL SURFACE.
5. IF WALL COVERING IS HARD SURFACE AND STRONG ENOUGH TO SUPPORT THE BOX, A TOGGLE BOLT (LI 8181) MAY BE USED BY DRILLING A 1/2" HOLE IN WALL, BETWEEN WALL STUDS.
6. CUT REAR LIP OFF FLANGE TO ALLOW DUCT TO BE MOUNTED FLUSH TO WALL. THIS WILL ALSO ALLOW FLOOR TILE TO BE REMOVED FOR MAINTENANCE.
7. SEAL AROUND DUCT, AT RAISED FLOOR, WITH FOAM INSERT MATERIAL (LI 1257).
8. MOUNT THE BOX SO THAT THE TOP IS 4 FEET FROM RAISED FLOOR.
9. SEE TO 31-10-10 FOR PROPER USE OF TOOLS AND PROCEDURES TO INSTALL THE ANCHORING DEVICES.
10. CUT DUCT COVER EVEN WITH TOP OF FLOOR TILE.

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	1100	EXPANSION SHIELD	A/R
2.	991	THREADED ROD, 3/8"	A/R
3.	86	FLAT WASHER, 3/8"	A/R
4.	105	HEX NUT, 3/8"	A/R
5.	1072	STUD, THREADED 1/2" SHANK	A/R
	1073	STUD, THREADED 1 1/4" SHANK	A/R
	1074	STUD, THREADED 1 1/2" SHANK	A/R
	1075	STUD, THREADED 1 3/4" SHANK	A/R
6.	484	CONDUIT, 1/2" ALUMINUM EMT	A/R
7.	46	BOLT, 3/8" X 2 1/2 IN. LONG	A/R
8.	6646	LAG BOLT, 3/8" X 3 IN. LONG	A/R
9.	8181	TOGGLE BOLT, 3/16-24 X 3 IN. LONG	A/R
10.	6913	PUTTY, WATER-SOLUBLE, FLAME RETARDANT	A/R

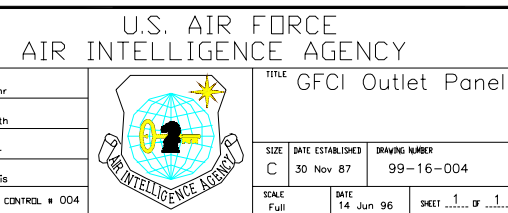
U.S. AIR FORCE  
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C. C. Snellgrove  
CHECKER  
C. Smith  
ENGINEER  
R. S. Golus  
APPROVER  
D. Duff  
DRAWING CONTROL # 346



TITLE  
Standard Box  
Flange and Wall  
Mounting  
SIZE  
C  
DATE ESTABLISHED  
15 NOV 85  
DRAWING NUMBER  
99-15-346  
SCALE  
Full  
DATE  
15 JAN 97  
SHEET  
1 OF 1





QA98-004 NOTE 4 CHANGE YELLOW WIRE TO GREEN 10 DEC 99 JD

## NOTES:

1. CONNECT THE JUNCTION BOXES TOGETHER WITH TWO BOX CONNECTORS AND THE 1 1/2" PIECE OF EMT CONDUIT. THEN ATTACH THEM TO THE ADJUSTABLE MOUNTING ANGLE USING 10-32 HARDWARE. BOTTOM OF AC SWITCH JUNCTION BOX SHOULD BE 6 INCHES ABOVE HORIZONTAL STRUT, AS SHOWN.
2. CONNECT BLACK WIRE TO BRONZE TERMINAL; WHITE WIRE TO SILVER TERMINAL.
3. IN-LINE SURGE SUPPRESSOR USED FOR CPU PLUG ONLY.
4. ATTACH #10 AWG GREEN WIRE (LI 01091) TO STATION GROUND USING SPLIT BOLT CONNECTOR (LI 00845). ATTACH TO FIRST AVAILABLE POINT ON REAR OF RACK USING TERMINAL LUG (LI 00385) AND 10-32 X 1/2" SCREW, LOCKWASHER, AND NUT. MARK OLDER INSTALLATIONS (GREEN WIRE) WITH YELLOW TAPE (LI 00952).

FIG. 1  
RAISED FLOOR OPTION  
FRONT VIEW

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	RAISED FLOOR QTY (SHT. 1)	OVERHEAD QTY (SHT. 2)
1.	868	12 AWG GREEN WIRE	AS REQ	AS REQ
2.	876	12 AWG BLACK WIRE	AS REQ	AS REQ
3.	877	12 AWG WHITE WIRE	AS REQ	AS REQ
4.	388	WIRE NUT	1 EA	1 EA
5.	493	AC SWITCH, 20 AMP (OPTIONAL)	1 EA	1 EA
6.	491	SWITCH COVER, 2" X 4"	1 EA	1 EA
7.	310	DUPLEX AC OUTLET	1 EA	1 EA
8.	497	DUPLEX OUTLET COVER	1 EA	1 EA
9.	490	JUNCTION BOX, 2" X 4"	2 EA	3 EA
10.	484	CONDUIT, 1/2" EMT	1 1/2 IN.	1 1/2 IN.
11.	485	BOX CONNECTOR FOR 1/2" CONDUIT	2 EA	2 EA
12.	1241	1/2" BOX CONN. (FOR FLEX)		2 EA
13.	1240	1/2" FLEX CONDUIT	AS REQ	AS REQ
14.	1298	TERMINAL LUG	2 EA	2 EA
15.	27	10-32 X 1/2" SCREW	3 EA	3 EA
16.	70	#10 FLAT WASHER	4 EA	4 EA
17.	94	10-32 HEX NUT	3 EA	3 EA
18.	647	SURGE SUPPRESSOR NOTE 3	1 EA	1 EA
19.	489	CONDUIT HARDWARE, JUNCTION BOX COVER 2" X 4"		1 EA
20.	2015	LOCKWASHER	1 EA	1 EA
21.	952	YELLOW TAPE	IF REQ	IF REQ
22.	7119	#10 AWG GREEN WIRE	AS REQ	AS REQ
23.	1254	1/2" BOX CONN. 45 DEG. (FOR FLEX)	1 EA	

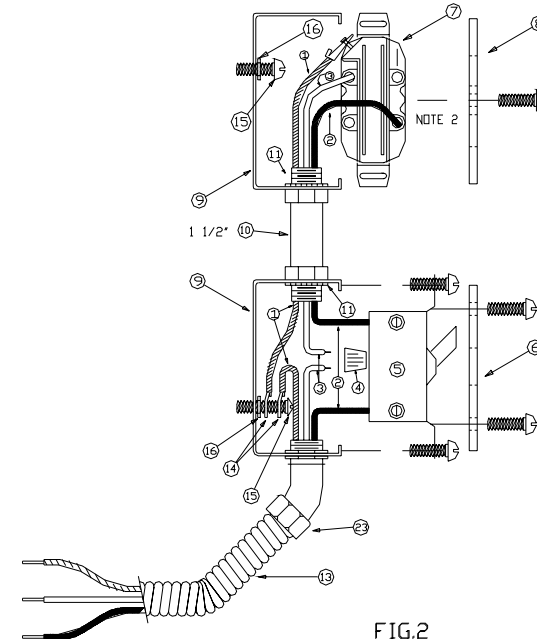

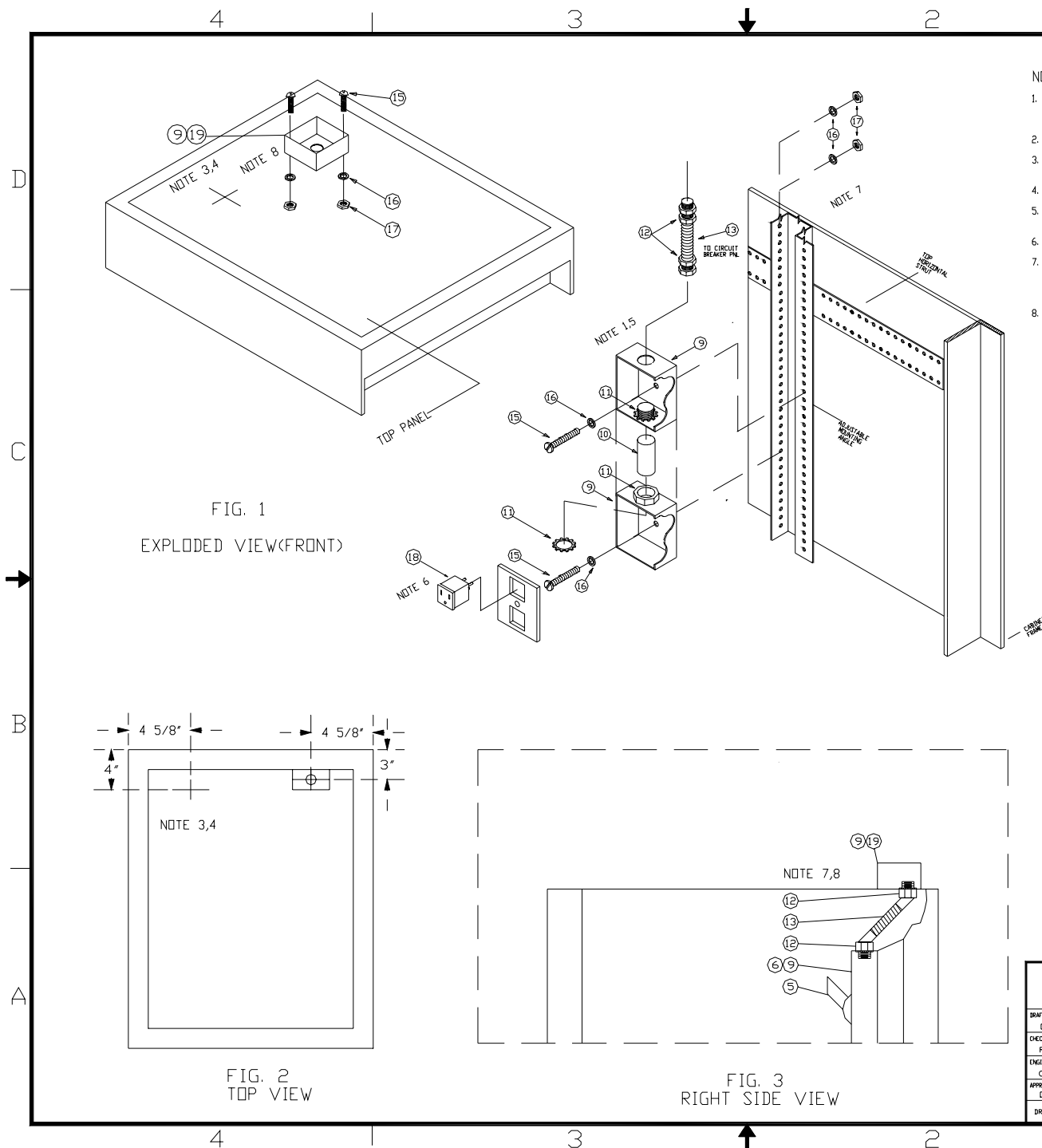


FIG. 2  
SWITCH AND OUTLET  
PARTS BREAKDOWN

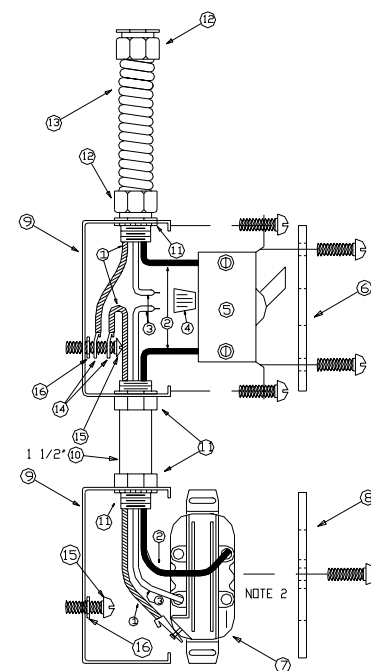
U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE Raised Floor Rack Power Details	
DRAFTSMAN Davis, T. CHECKER R. S. Galus ENGINEER C. Smith APPROVED D. Duff DRAWING CONTROL # 018		SIZE C DATE ESTABLISHED 8 AUG 88 SCALE Full	DRAWING NUMBER 99-16-018 DATE 10 DEC 99 SHEET 1 OF 2

P018-2

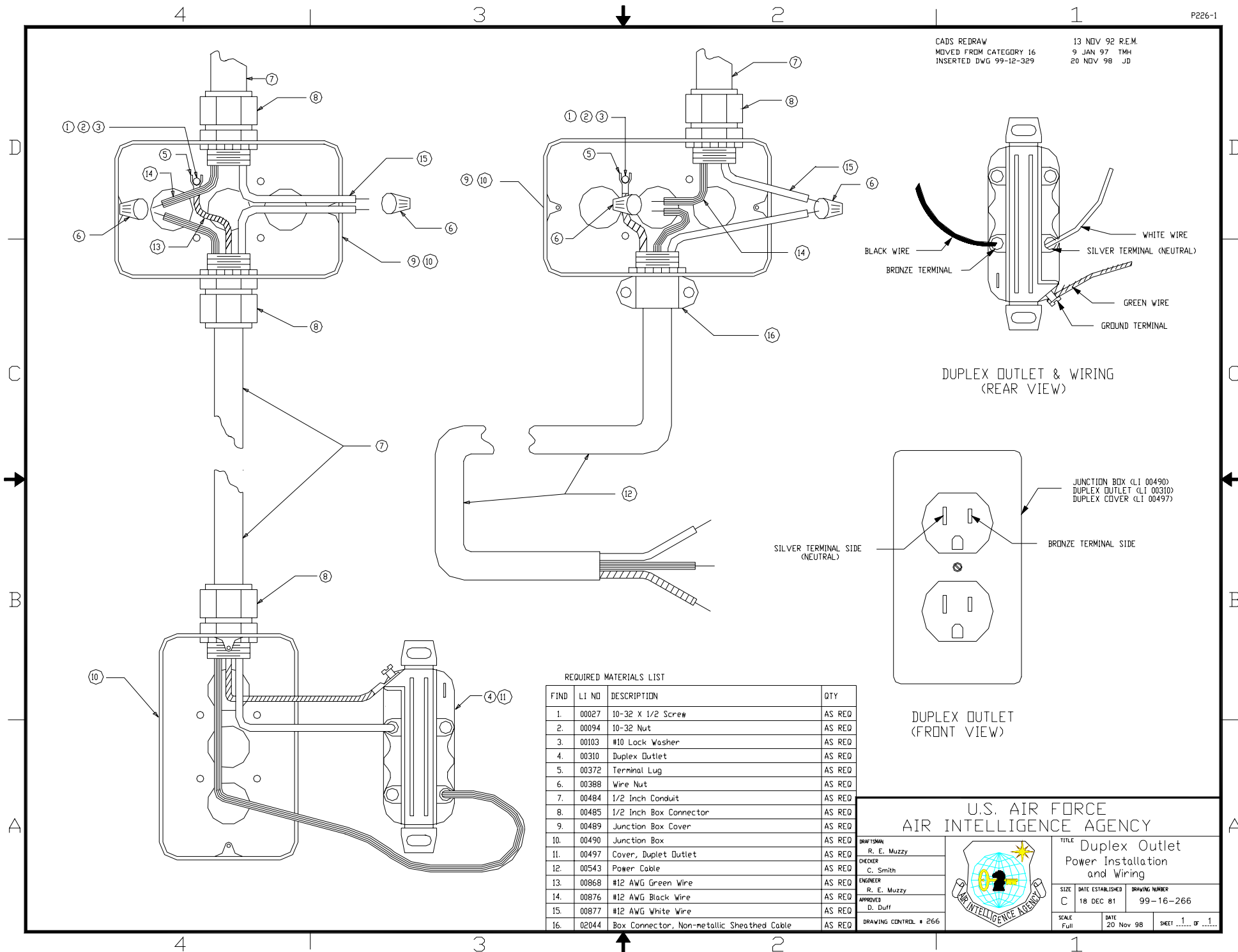


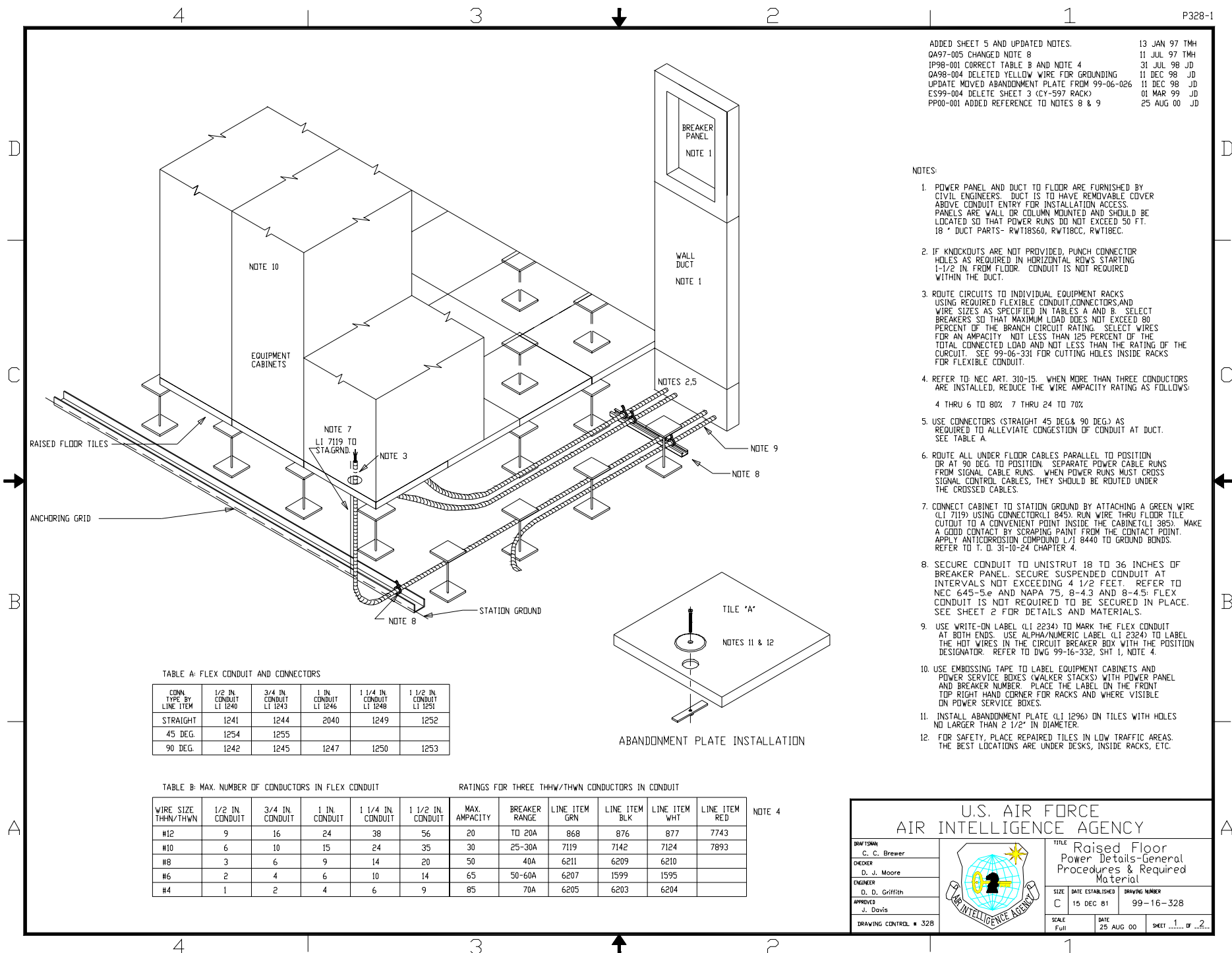
## NOTES:

1. CONNECT THE JUNCTION BOXES TOGETHER WITH TWO BOX CONNECTORS AND THE 1 1/2" PIECE OF EMT CONDUIT. THEN ATTACH THEM TO THE ADJUSTABLE MOUNTING ANGLE USING 10-32 HARDWARE, AS SHOWN.
2. CONNECT BLACK WIRE TO BRONZE TERMINAL; WHITE WIRE TO SILVER TERMINAL.
3. USE THIS AS CENTER POINT FOR SIGNAL ENTRY. MFIS WILL DETERMINE DUCTING USED (WIREMOLD, DUCT, ETC.).
4. THE FIS WILL SPECIFY THE LOCATION AND ORIENTATION OF THE JUNCTION BOX.
5. THE TOP OF THE AC SWITCH JUNCTION BOX SHOULD BE MOUNTED ONE FOOT BENEATH THE TOP PANEL. AC SWITCHES INSTALLATIONS ARE OPTIONAL.
6. IN-LINE SURGE SUPPRESSOR USED FOR CPU PLUG ONLY.
7. ATTACH #10 AWG GREEN WIRE (LI 7119) TO STATION GROUND USING SPLIT BOLT CONNECTOR (LI 00845). ATTACH TO FIRST AVAILABLE POINT ON REAR OF RACK USING TERMINAL LUG (LI 00385) AND 10-32 X 1/2 SCREW, LOCKWASHER, AND NUT. MARK OLDER INSTALLATIONS (GREEN WIRE) WITH YELLOW TAPE (LI 00952).
8. PUNCH OUT KNOCKOUT ON THE JUNCTION BOX FOR 1/2 INCH CONDUIT. INSTALLATION SCHEME WILL SPECIFY HARDWARE USED FROM JUNCTION BOX TO AC SOURCE.



U.S. AIR FORCE AIR INTELLIGENCE AGENCY			
DRAFTSMAN Davis, T.		TITLE Rack Power Overhead Details	
CHECKER R. S. Golus		SIZE C	
ENGINEER C. Smith		DATE ESTABLISHED 8 AUG 88	
APPROVED D. Duff		DRAWING NUMBER 99-16-018	
DRAWING CONTROL # 018		SCALE Full	
		DATE 10 DEC 99	
		SHEET 2 OF 2	

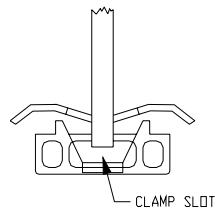
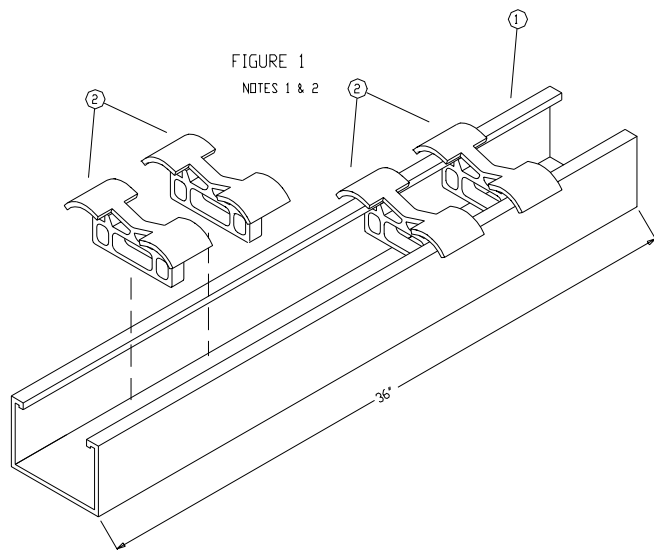




UPDATED RML  
 UPDATED NOTE ON DETAIL A  
 ADDED SHEET 5  
 IP98-002 ADDED L/I 6360 TO TABLE A  
 ES99-004 DELETE SHEETS 3 (CY-597 RACK)

16 APR 93 PMS  
 5 SEP 95 PMS  
 13 JAN 97 TMH  
 31 JUL 98 JD  
 01 MAR 99 JD

FIGURE 1  
 NOTES 1 & 2

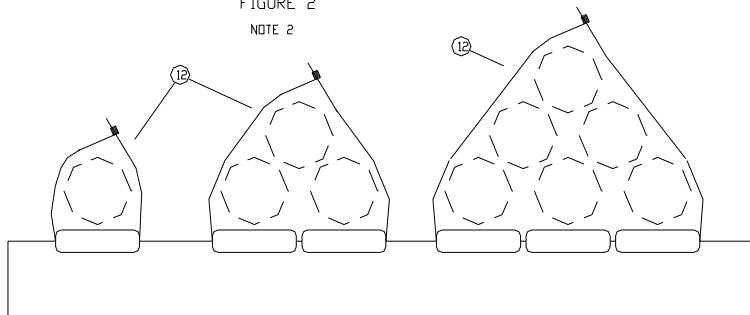


DETAIL A

NOTES:

- CUT UNISTRUT (LI-1071) TO A NOMINAL LENGTH OF 36 INCHES. SECURE TO FLOOR WITH HILTI STUD (LI-1074), 3/8" WASHER (LI-86) AND 3/8" NUT (LI-105) OR EXPANSION SHIELD (LI-1100), 3/8" WASHER (LI-86) AND 3/8" BOLT (LI-963), WITHIN 48 INCHES NOMINAL FROM THE BREAKER PANEL. INSTALL END CAPS (LI-1106) TO THE ENDS OF UNISTRUT. IF OBSTRUCTIONS PROHIBIT 48 INCH INSTALLATION, MFS WILL DETERMINE CLOSEST POSSIBLE SECURING POINT.
- SECURE CONDUIT TO UNISTRUT WITH CHANNEL CLAMP (LI-570) AS FOLLOWS:
  - PLACE CLAMP LENGTHWISE IN CHANNEL AT DESIRED LOCATION, PUSH DOWN ON CENTER, AND TWIST 1/4 TURN.
  - INSERT TY-RAP (INCLUDED WITH CHANNEL CLAMP LI-570) THROUGH CLAMP SLOT (SEE DETAIL A), LOOP AROUND CONDUIT, FEED THE TAIL THROUGH IT'S HEAD, AND PULL TIGHT, SNIP OFF EXCESS TAIL. FIG.2 SHOWS SUGGESTED METHOD FOR CONDUIT. COMBINE TY-RAPS AS NEEDED FOR EXTRA LENGTH.
- SECURE CONDUIT TO UNISTRUT WITHIN 48 INCHES NOMINAL OF WHERE CONDUIT PASSES THRU RAISED FLOORING. IF OBSTRUCTIONS PROHIBIT 48 INCH INSTALLATION, MFS WILL DETERMINE CLOSEST POSSIBLE SECURING POINT. SEE FIG.2 OR FIG.3. IF REQUIRED, USE ANCHOR KIT AS SHOWN IN FIG.4.
- WHEN CONDUIT IS PARALLEL TO UNISTRUT, USE L/I 156 TY-RAPS TO ATTACH SUPPLIED TY-RAP TO CLAMP AS SHOWN.

FIGURE 2  
 NOTE 2



NOTE 4

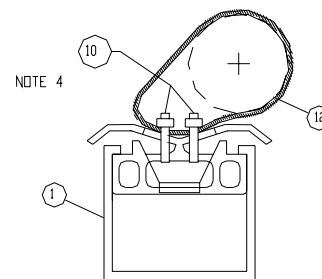


FIGURE 3

NOTE 3

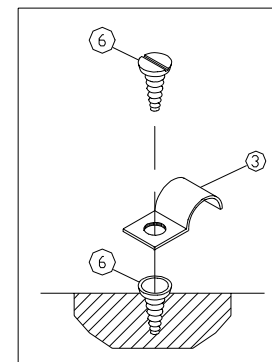


FIGURE 4  
 NOTE 3

REQUIRED MATERIALS LIST

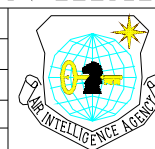
FIND	LI NO	DESCRIPTION	QTY
1.	01071	CHANNEL, SLOTTED	AS REQ
2.	00570	CHANNEL, CLAMP	AS REQ
3.		STRAP, RETAINING, SEE TABLE A	AS REQ
4.	00963	BOLT, 3/8-16 X 1 1/2, NOT SHOWN	AS REQ
5.	01100	EXPANSION SHIELD, NOT SHOWN	AS REQ
6.	06818	ANCHOR KIT, SEE FIG 4	AS REQ
7.	00105	NUT, 3/8", NOT SHOWN	AS REQ
8.	00086	WASHER, 3/8", NOT SHOWN	AS REQ
9.	01074	HILTI STUD, NOT SHOWN	AS REQ
10.	00156	TY-RAP, 2 EA PER CLAMP	AS REQ
11.	01106	END CAP, NOT SHOWN	2 EA
12.	6360	12" TY-RAP	AS REQ

TABLE A: RETAINING STRAP LIST

LINE ITEM	FLEX SIZE
7539	3/4"
7542	1"
604	1 1/4"
610	1 1/2"

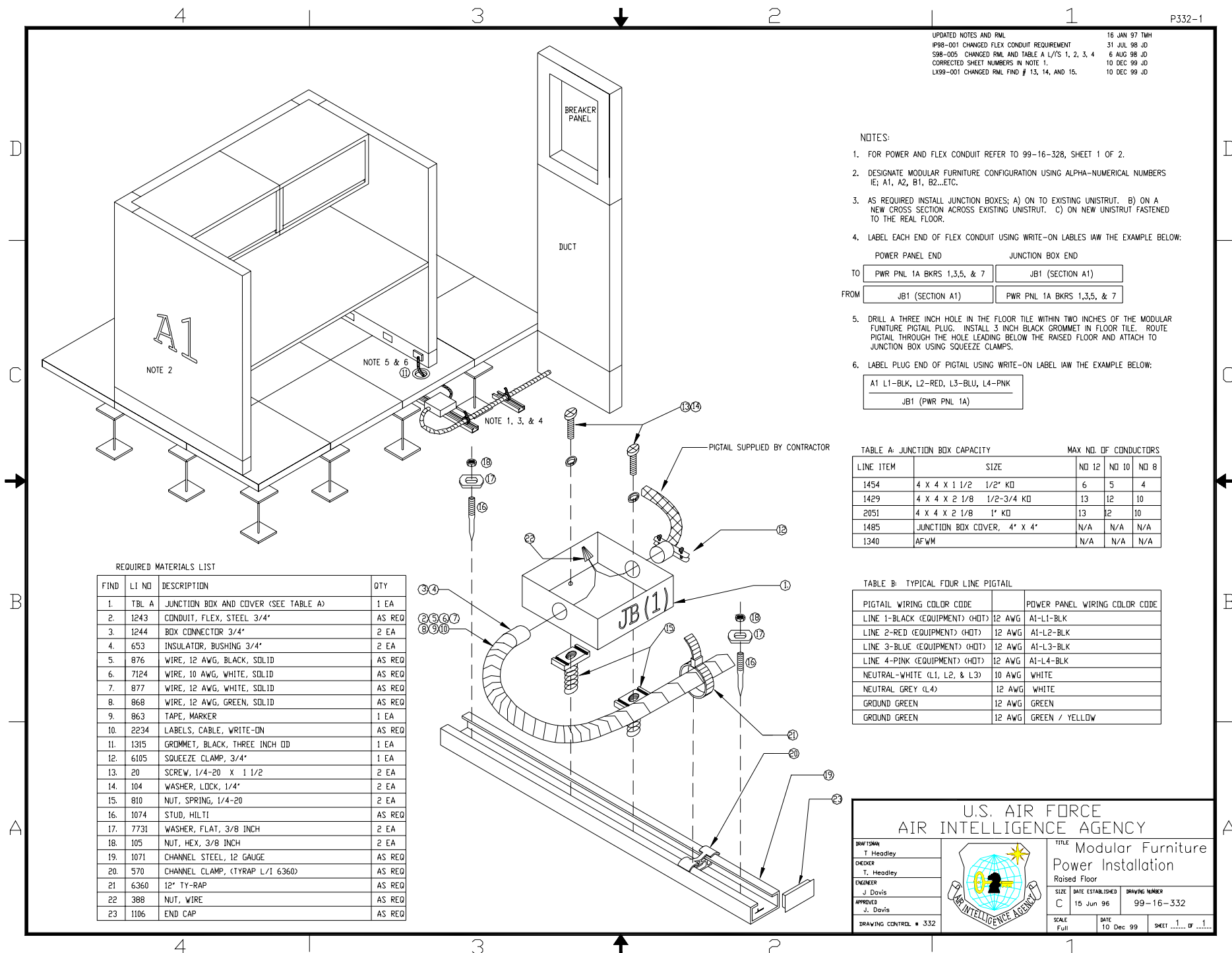
U.S. AIR FORCE  
 AIR INTELLIGENCE AGENCY

DRAFTSMAN  
 C. C. Brewer  
 CHECKER  
 R. S. Golus  
 ENGINEER  
 F. W. Wood  
 APPROVED  
 D. Duff  
 DRAWING CONTROL # 328



TITLE  
 Securing Flex  
 Conduit Below Raised Floor  
 SIZE C DATE ESTABLISHED 7 OCT 89 DRAWING NUMBER 99-16-328  
 SCALE Full DATE 1 MAR 99 SHEET 2 OF 2

P332-1



DELETED SHEET 1, RENUMBERED DRAWING  
MOVED FROM CATEGORY 15 AND  
UPDATED FIGURE NUMBERS

15 MAY 96 PMS  
27 JAN 97 TMH

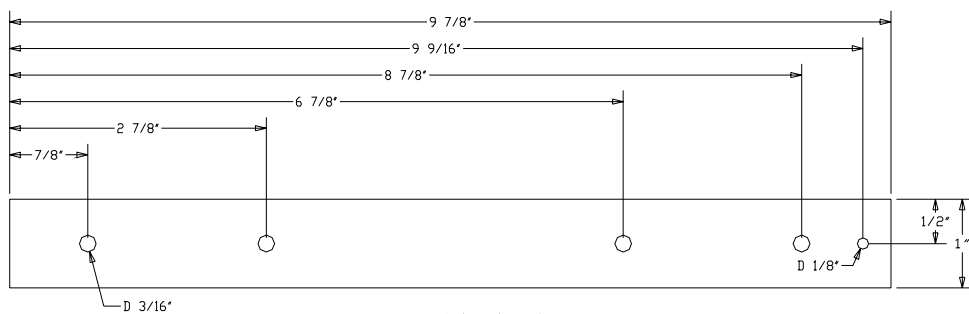
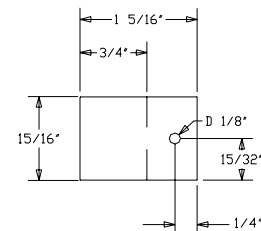
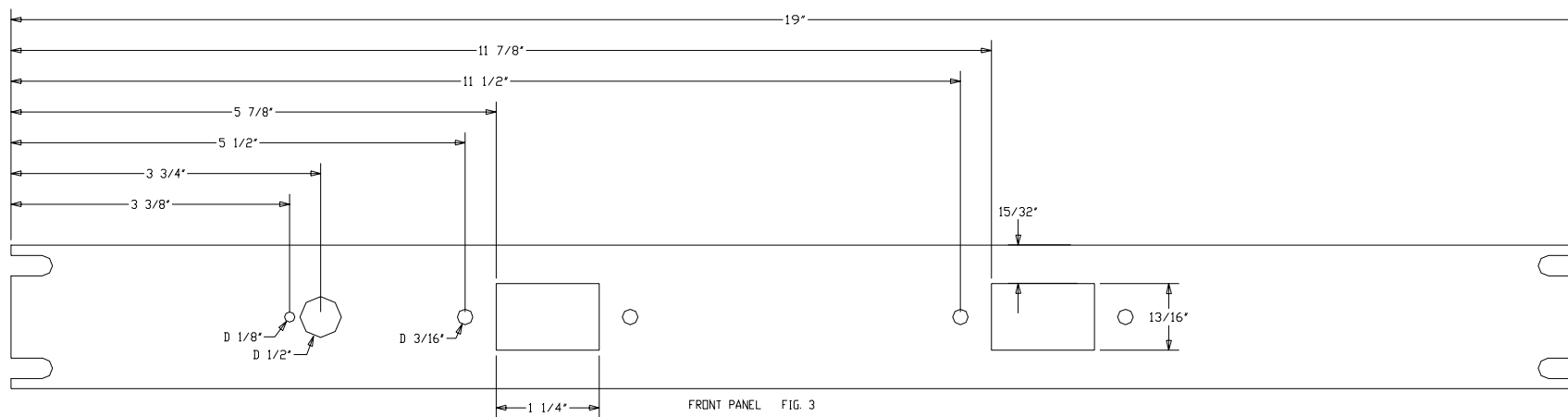


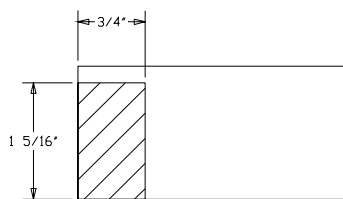
FIG 1. PLUG STRIP CASING NOTE 4



NOTE 2  
FIG 2. L BRACKET

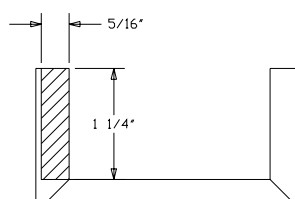


FRONT PANEL FIG. 3

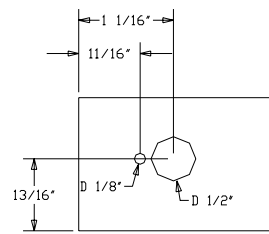


COVER MINI BOX, SIDE VIEW, RIGHT

FIG. 4

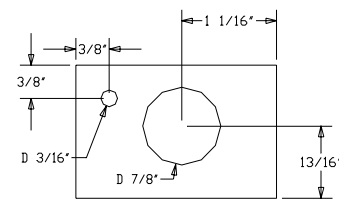


MINI BOX SIDE VIEW, RIGHT



MINI BOX FRONT VIEW

FIG. 5



MINI BOX REAR VIEW

## NOTES:

1. DEBURR ALL EDGES.
2. PAINT BRACKET WITH #16307 GREY PAINT.
3. ALL DIMENSIONS IN INCHES.
4. L100436 COMES IN 6 FT LENGTHS, WITH TWELVE OUTLETS. WHEN CUT TO THE SPECIFICATIONS IN THIS SERIES OF DRAWING, THERE WILL BE ENOUGH MATERIAL FOR SIX EXTERNAL POWER OUTLET PANELS.
5. NOTCHED FOR MINI BOX ENTRY.

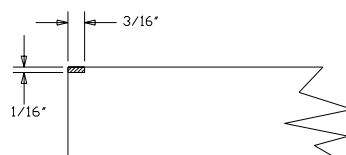


FIG 6. PLUG STRIP CASING

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T Espinoza  
CHECKER  
R D Suttles  
ENGINEER  
W G Meyers  
APPROVED  
J. Davis  
DRAWING CONTROL # 335



TITLE  
External Power  
Outlet Panel

SIZE C DATE ESTABLISHED 27 Jun 75 DRAWING NUMBER 99-16-335  
SCALE Full DATE 15 May 96 SHEET 1 OF 2



DELETED SHEET 1, RENUMBERED DRAWING. 15 MAY 96 PMS  
MOVED FROM CATEGORY 15 AND  
UPDATED FIGURE NUMBERS 27 JAN 97 TMH

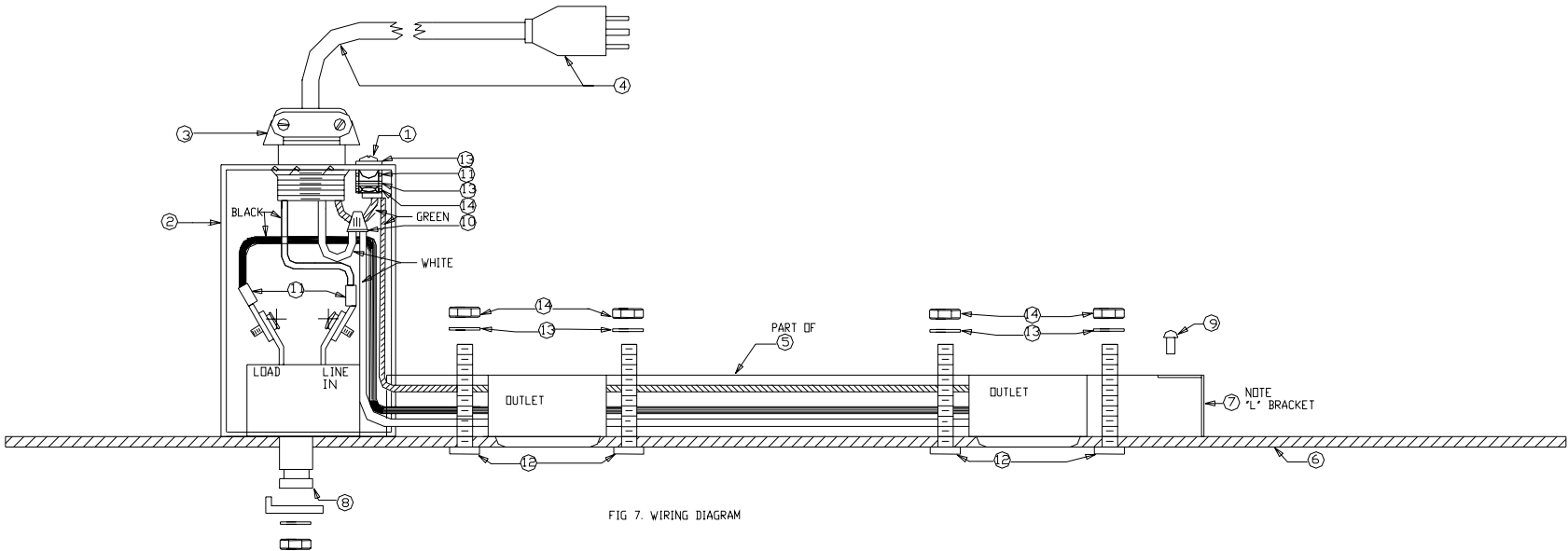


FIG 7. WIRING DIAGRAM

NOTES:  
1. "L" BRACKET IS RIVETED TO THE INSIDE OF  
OUTLET CASING.

PARTS REQUIRED

FIND NO.	LINE ITEM	QTY	NDUN
1	27	1	SCREW MACHINE 10X32X1/2"
2	511	1	MINI BOX 1 5/8" X 2 1/8" X 3 1/4"
3	2007	1	BOX CONNECTOR
4	631	1	CABLE ASSY. ELECTRICAL POWER
5	436	1	PLUG STRIP (9 7/8" IN LENGTH. P/O L100436)
6	492	1	ALUMINUM PANEL, 19" X 1 3/4" X 1/8"
7	705	1	22 GA. COLD ROLLED STEEL 1 5/16" X 15/16"
8		1	5 AMP CIRCUIT BREAKER NSN 5925-00-837-7944
9	22	1	RIVET, BLIND 1/8" X 1/8"
10	8117	1	SPLICE CONNECTORS
11	1298	3	TERMINAL LUGS
12	34	4	SCREW, FLATHEAD 10 X 32 X 1 1/2
13	103	6	#10 STAR WASHER
14	94	5	HEX NUT 10-32

U.S. AIR FORCE  
AIR INTELLIGENCE AGENCY

DRAFTSMAN  
T. Espinoza  
CHECKER  
R D Suttles  
ENGINEER  
W G Meyers  
APPROVER  
J. Davis  
DRAWING CONTROL # 335



TITLE  
External Power  
Outlet Panel

SIZE  
C  
DATE ESTABLISHED  
27 Jun 75  
DRAWING NUMBER  
99-16-335

SCALE  
Full  
DATE  
15 May 96  
SHEET  
2 OF 2

P342-1

FIGURE A  
SIGNAL SERVICE ADAPTER PLATE  
WITH OPTIONAL  
TELEPHONE CONNECTOR MOUNTING PLATE

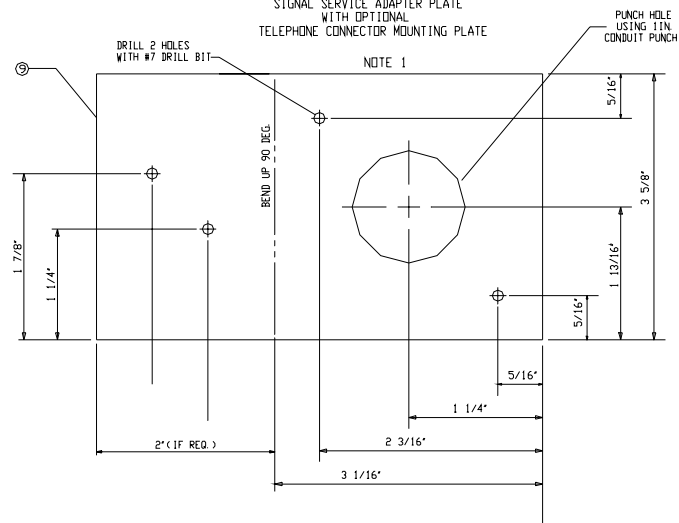
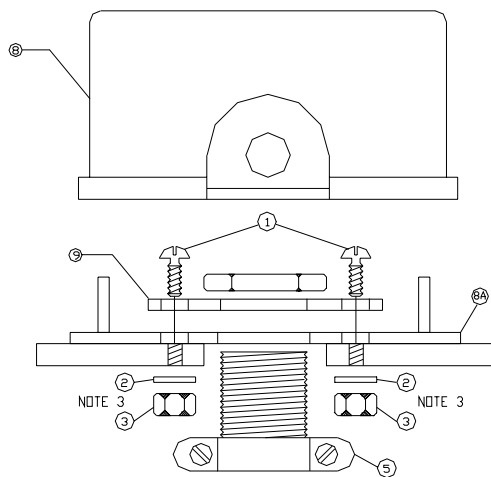


FIGURE C  
SIGNAL SERVICE BOX



MATERIALS REQUIRED FOR FABRICATION KITS

FIND NO.	DESCRIPTION	LINE ITEM	QTY. SIG.	QTY. PWR.
1.	10-32 SCREW	00017	2EA.	2EA.
2.	# 10 LOCK WASHER	08103	2EA.	2EA.
3.	10-32 NUT	00094	2EA.	2EA.
4.	BOX CONNECTOR	01241	---	1EA.
5.	BOX CONNECTOR	02044	1EA.	---
6.	AC OUTLET	00310	---	1EA.
7.	POWER SERVICE BOX	00851	---	1EA.
7A.	POWER SERVICE BOX BASE PLATE	PART OF 7	---	1EA.
8.	SIGNAL SERVICE BOX	00852	1EA.	---
8A.	SIGNAL SERVICE BOX BASE PLATE	PART OF 8	1EA.	---
9.	ADAPTER PLATE (MADE FROM L1-01792)	01792	1EA.	1EA.
10.	INSULATING BUSHING	651	---	1EA.
11.	TELEPHONE TERMINAL CONNECTOR	1295	AS REQ	---

FIGURE B  
POWER SERVICE ADAPTER PLATE

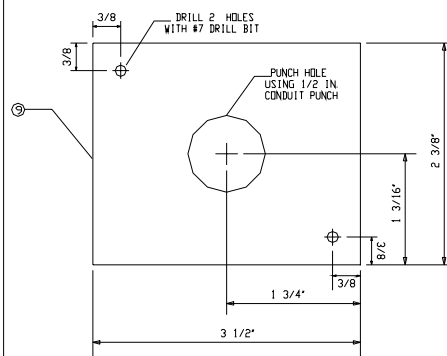
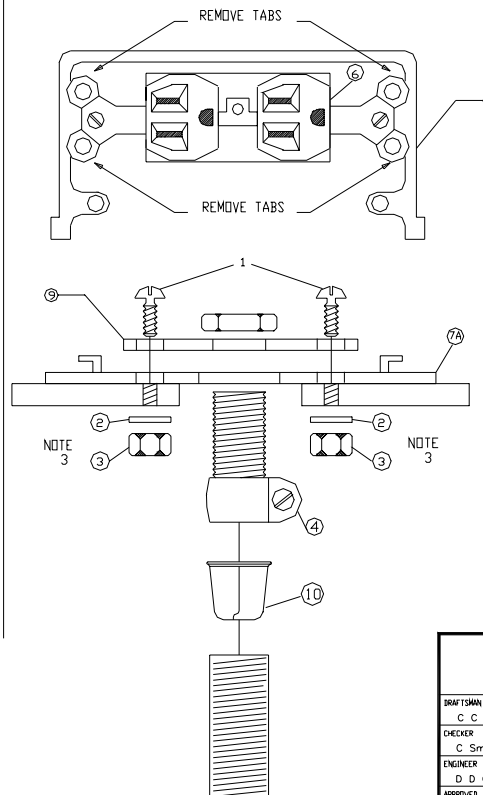


FIGURE D  
POWER SERVICE BOX



ADDED SHEET 3 AND RENUMBERED DWG.  
ADDED NOTE 4.  
ADDED SHEET 6.

13 FEB 96  
8 JUL 97  
6 APR 98  
RWM  
PMS  
PMS

NOTE: MOUNT BOXES AWAY FROM TRAFFIC AND SYSTEM PLACEMENT, DETERMINE IF EXISTING BOXES ARE AVAILABLE FOR RELOCATION BEFORE ADDING ADDITIONAL BOXES.

#### FABRICATION INSTRUCTIONS

- FABRICATE REQUIRED SERVICE ADAPTER 1AW FIG. A FOR SIGNAL SERVICE (SEE NOTE 1) OR FIG. B FOR POWER SERVICE.
- USE THE SERVICE ADAPTER AS A TEMPLATE TO MARK THE MOUNTING HOLES ON THE SERVICE BASE PLATE.
- THE MOUNTING TABS MUST BE REMOVED BEFORE AC SOCKET INSTALLATION. SEE FIG. D.

#### INSTALLATION INSTRUCTIONS

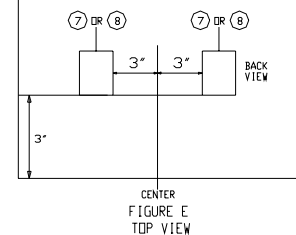
- USE SERVICE ADAPTER AS A TEMPLATE TO MARK THE TWO MOUNTING HOLES ON THE FLOOR TILE. DRILL AND TAP FLOOR TILE USING A #21 DRILL BIT AND 10-32 TAP. SEE FIGURE E AND NOTE 2 FOR SERVICE PLACEMENT, SEE NOTE 3.
- CUT HOLE IN THE FLOOR TILE AS FOLLOWS:  
SIGNAL SERVICE CUT A 2 1/2" HOLE (FIG. A).  
POWER SERVICE CUT A 1 3/4" HOLE (FIG. B).

C. ADAPTER PLATE OMITTED WHEN USING PREASSEMBLED LARGE CABLES FOR SIGNAL SERVICE. USE EXISTING PREFORMED HOLES IN WALKER BOX. MOUNT BASE DIRECTLY TO FLOOR.

NOTES \* ALL DIMENSIONS IN INCHES (+/- 1/32) ANGLE TOLERANCE (+/- 0.5 DEG)

- RIGHT ANGLE MOUNTING PLATE IS DESIGNED TO ACCOMMODATE TELEPHONE TERMINAL CONNECTOR (L1-1295). IF NOT SPECIFIED ON FAB REQUEST, FABRICATE THE ADAPTER PLATE WITHOUT THE 2" SECTION FOR THE 90 DEG BEND.
- MOUNT SERVICE BOXES ON FLOOR TILE 3" FROM THE CENTER AND 3" FROM EDGE. SEE FIG. E. FACE OUTLETS TOWARD CENTER. IF NECESSARY, SERVICE BOXES CAN BE MOVED OFF CENTER OR ROTATED FOR FLOOR SUPPORT OR EQUIPMENT PLACEMENT. MFS WILL DETERMINE SERVICE REQUIREMENTS. A SINGLE SERVICE BOX MAY BE MOUNTED 3 INCHES FROM THE EDGE AND CENTERED.
- IF FLOOR TILE CANNOT BE TAPPED, DRILL MOUNTING HOLES IN THE FLOOR TILE USING A #7 DRILL BIT. USE 10-32 HARDWARE TO MOUNT SERVICE ADAPTER PLATE AND SERVICE BOX BASE PLATE 1AW FIG. C OR FIG. D.
- LABEL SERVICE FITTING WITH PANEL AND BREAKER INFORMATION USING EMBOSSED TAPE.

NOTE 2



### U.S. AIR FORCE AIR INTELLIGENCE AGENCY

DRAFTSMAN  
C C Brewer  
CHECKER  
C Smith  
ENGINEER  
D D Griffith  
APPROVED  
D. Duff  
DRAWING CONTROL # 342



TITLE  
Raised Floor  
Service Fitting  
Fabrication Kits  
Service Box  
SIZE  
C  
DATE ESTABLISHED  
01 APR 85  
DRAWING NUMBER  
99-16-342  
SCALE  
Full  
DATE  
8 JUL 97  
SHEET  
1 OF 6

P342-2

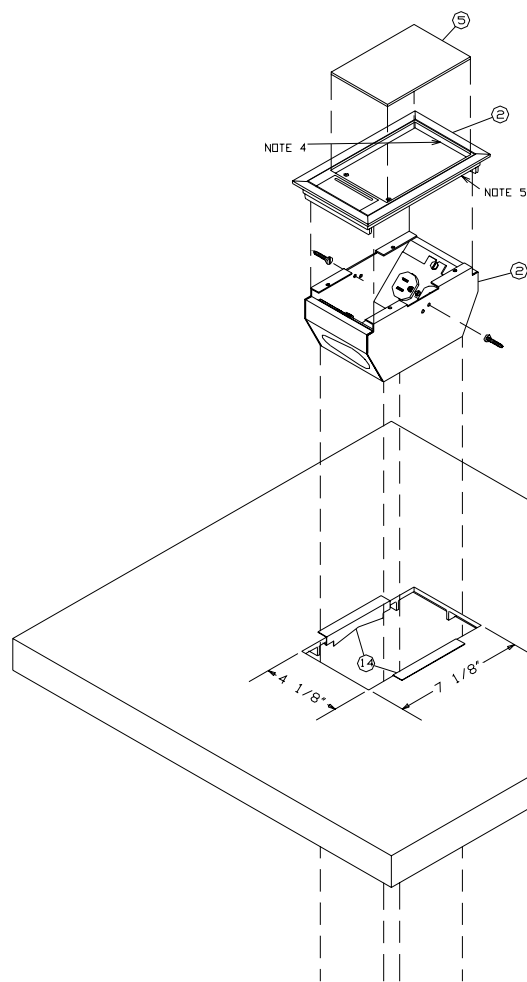


FIG. A FULL VIEW

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	0995	BLANK PANEL, 45 DEGREE	1 EA
2.	0996	ACCESS FLOOR MODULE (NOTE 3)	1 EA
3.	1254	BOX CONNECTOR, 45 DEGREE	1 EA
4.	0103	LOCK WASHER, NO. 10	2 EA
5.	0997	COMPUTER FLOOR TILE	1 EA
6.	0651	INSULATING BUSHING	1 EA
7.	0310	AC OUTLET	1 EA
8.	0149	TIE BUCKLE	1 EA
9.	0156	TIE WRAP	1 EA
10.	0027	SCREW 10/32, 1/2"	1 EA
11.	0113	GROMMET	AS REQ.
12.	0690	ADHESIVE	AS REQ.
13.	0094	NUT, 10-32	2 EA
14.	1088	HOLD DOWN BRACKET	1 PR
15.	0070	WASHER, NO. 10	1 EA

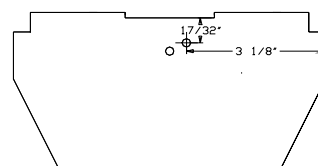


FIG. B MODULE SIDE VIEW

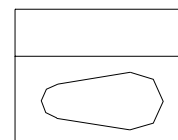


FIG. C MODULE SIGNAL WIRE SIDE

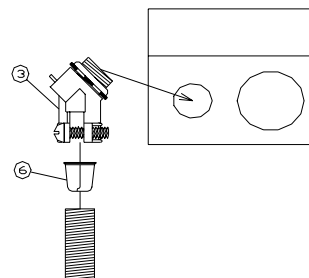


FIG. D MODULE AC WIRE SIDE

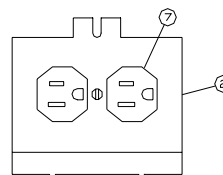


FIG. E AC PLATE

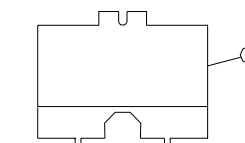


FIG. F BLANK PLATE

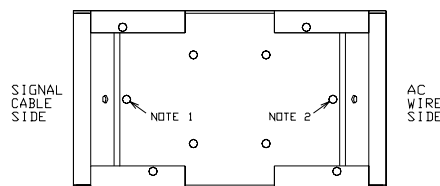


FIG. G MODULE TOP VIEW

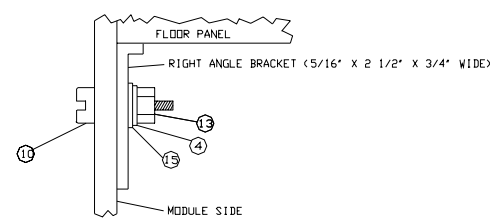


FIG. H TYPICAL SIDE BRACKET MOUNTING

NOTE: MOUNT BOXES AWAY FROM TRAFFIC AND SYSTEM PLACEMENT, DETERMINE IF EXISTING BOXES ARE AVAILABLE FOR RELOCATION BEFORE ADDING ADDITIONAL BOXES.

## FABRICATION INSTRUCTIONS

- DRILL & TAP NEW HOLES IN LI 996 IAW FIG. B USING #21 DRILL BIT & 10/32 TAP FOR RAISED FLOOR INSTALLATION. USE EXISTING HOLES FOR RAISED FLOOR WITH CARPET.
- GLUE FIND #5 ONTO LID IAW FIG. A USING FIND #12.
- IAW FIG. D KNOCKOUT SMALL HOLE AND ATTACH FIND #3 ON AC WIRE SIDE OF MODULE.
- IAW FIG. E MOUNT FIND #7 ONTO FIND #2. BREAK OFF TABS ON FIND #7.
- IAW FIG. F USE TURRET PUNCH SIZE 7/8\"/>

## INSTALLATION INSTRUCTIONS

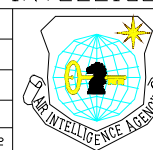
- CUT OPENING IN FLOOR PANEL IAW MEASUREMENTS IN FIG. A. HOLE IS SHOWN IN MIDDLE OF FLOOR PANEL, BUT CAN BE CUT IN ONE QUADRANT AND PANEL ROTATED FOR BEST LOCATION OF MODULE. SPECIAL CASES MAY REQUIRE EXTRA PEDESTALS IF CUT IS ON EDGE OF FLOOR PANEL.
- TEMPORARILY INSTALL BOX TO DETERMINE MOUNTING METHOD. IF TIGHTENING SUPPLIED SET SCREWS (INSTALLED FROM INSIDE OF MODULE) WILL CONTACT SOME PART OF FLOOR PANEL OR ALLOW ONLY SLIGHT UPWARD MOVEMENT, THIS WILL BE THE PREFERRED MOUNTING METHOD. IF NOT, USE THE BRACKETS IN PARAGRAPH (1) BELOW. PARAGRAPH (2) METHOD IS PROVIDED AS A CONTINGENCY ONLY.
  - PLACE LI 1088 MOUNTING BRACKETS ON CENTER OF CUTOUT (UNDER CARPET IF INSTALLED) AND BEND TABS TIGHTLY UNDER FLOOR PANEL TO HOLD IN PLACE. INSERTING MODULE IN HOLE FURTHER SECURES BRACKETS. SET SCREWS WILL BE TIGHTENED UNDER BRACKETS AFTER SLIDING THE BRACKETS FOR BEST FIT. USE NEW HOLE IN FIG. B. FOR TILE FLOOR. USE EXISTING HOLE FOR CARPET FLOOR. MOUNTING THE BRACKET ON A TILE FLOOR WILL CAUSE THE MODULE FLANGE TO BE ELEVATED VERY SLIGHTLY. HOWEVER, THIS MOUNTING ALLOWS THE MODULE TO BE WIRED AND REMOVED FROM ABOVE FOR SERVICE, ETC. WITHOUT DISTURBING THE FLOOR PANEL. THIS FEATURE IS PART OF THE GENERAL DESIGN.
  - TO SECURE THE MODULE FROM BELOW THE FLOOR PANEL, CUT OFF AND FILE SMOOTH THE 3/4\"/>
- INSTALL SIGNAL CABLE IAW NOTE 1 IN FIG. G. ATTACH BLANK PLATE USING INCLUDED SCREW ON SIGNAL CABLE SIDE OF MODULE.
- AFTER RUNNING AC WIRE, ATTACH GROUND WIRE TO MODULE IAW FIG. G NOTE 2. INSTALL AC PLATE ON AC SIDE OF MODULE.

NOTES: ALL DIMENSIONS IN INCHES (+/- 1/32)

- ATTACH SIGNAL CABLE TO HOLE USING FIND #8, #9, #10.
- GROUND MODULE USING INCLUDED GREEN SCREW IN THIS HOLE.
- FIND #2 REPRESENTS ALL HARDWARE INCLUDED WITH ACCESS FLOOR MODULE.
- ALWAYS INSTALL LID WITH HINGE ON AC SIDE.
- IF TWO SURGE SUPPRESSORS (LI 647) ARE USED, A NOTCH MAY HAVE TO BE CUT IN PLASTIC LID FRAME.
- WHEN SERVICE FITTING IS USED FOR AC POWER, LABEL BEZEL WITH PANEL AND BREAKER INFORMATION USING EMBOSING TAPE.

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AIR INTELLIGENCE AGENCY

DRAFTSMAN  
C C Brewer  
CHECKER  
D J Moore  
ENGINEER  
J W Lacey  
APPROVER  
D. Duff  
DRAWING CONTROL # 342



TITLE  
Raised Floor  
Service Fitting  
Fabrication Kits  
Access Floor Module  
SIZE  
C  
DATE ESTABLISHED  
01 APR 85  
DRAWING NUMBER  
99-16-342  
SCALE  
Full  
DATE  
8 JUL 97  
SHEET  
2 of 6

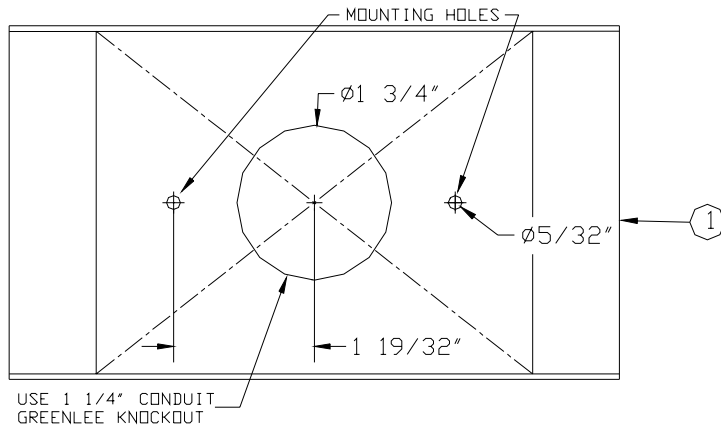
FIG A  
RFPSF BOTTOM VIEW

FIG B

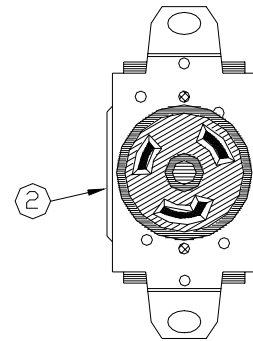
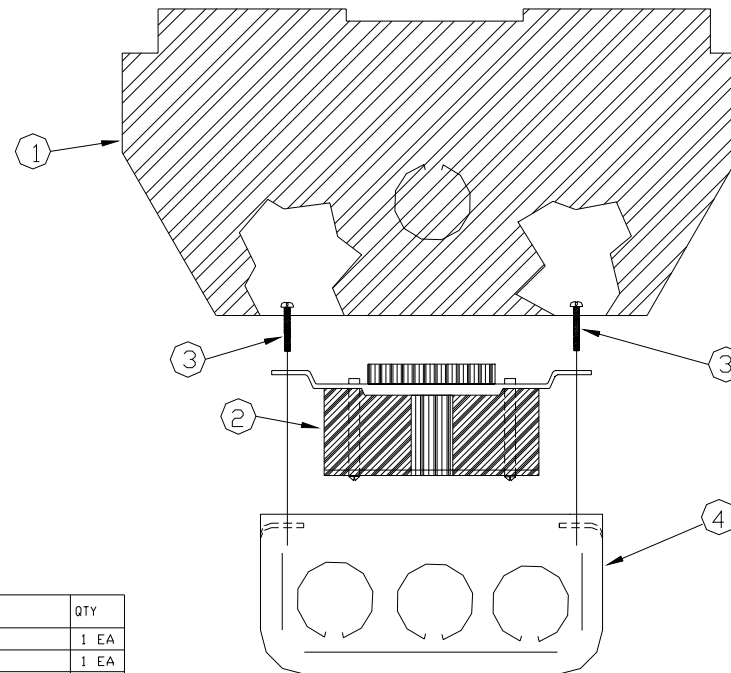


FIG C



## FABRICATION INSTRUCTIONS:

1. DETERMINE CENTER OF BOX (BOTTOM SIDE) BY PLACING A STRAIGHT EDGE FROM ONE CORNER TO THE OTHER CROSSING THE CENTER OF THE BOX. DRAW A LINE NEAR CENTER. DO THE SAME FOR THE OTHER TWO CORNERS.
2. DRILL A 3/8" PILOT HOLE. USE THE GREENLEE HYDRAULIC PUNCH TO MAKE A 1 3/4" DIAMETER HOLE. USE 1 1/4" CONDUIT GREENLEE KNOCK OUT.
3. USE RECEPTACLE AS A TEMPLATE TO MARK MOUNTING HOLES. DRILL MOUNTING HOLES WITH A 5/32" DRILL BIT.
4. PLACE RECEPTACLE IN 2X4 BOX AND MOUNT TO RFPSF USING L/I 47 (6 - 32 X 1/2" SCREWS) ACCORDING TO FIGURE C.

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	0996	ACCESS FLOOR MODULE	1 EA
2.	0243	RECEPTACLE	1 EA
3.	0047	SCREW, 6 - 32 X 1/2"	2 EA
4.	2046	2" X 4" JUNCTION BOX	1 EA

U.S. AIR FORCE  
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DRAWN BY  
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CHECKED  
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D. Duff  
DRAWING CONTROL # 342



TITLE  
Raised Floor  
Twist Lock Power  
Service Fitting  
SIZE  
C  
DATE ESTABLISHED  
13 Feb 96  
DRAWING NUMBER  
99-16-342  
SCALE  
Full  
DATE  
8 Jul 97  
SHEET  
3 OF 6

P342-4

ADDED SHEET 3 AND RENUMBERED DWG  
ADDED NOTE 5.  
ADDED SHEET 6.

13 FEB 96 RWM  
8 JUL 97 PMS  
6 APR 98 PMS

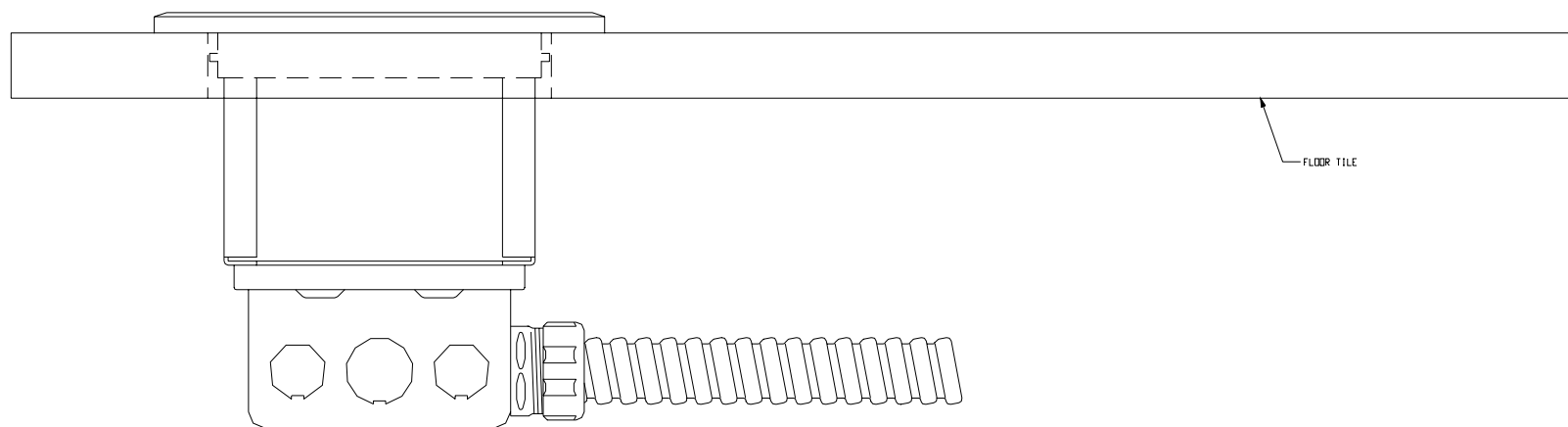


FIGURE A  
LISKEY BOX SIDE VIEW

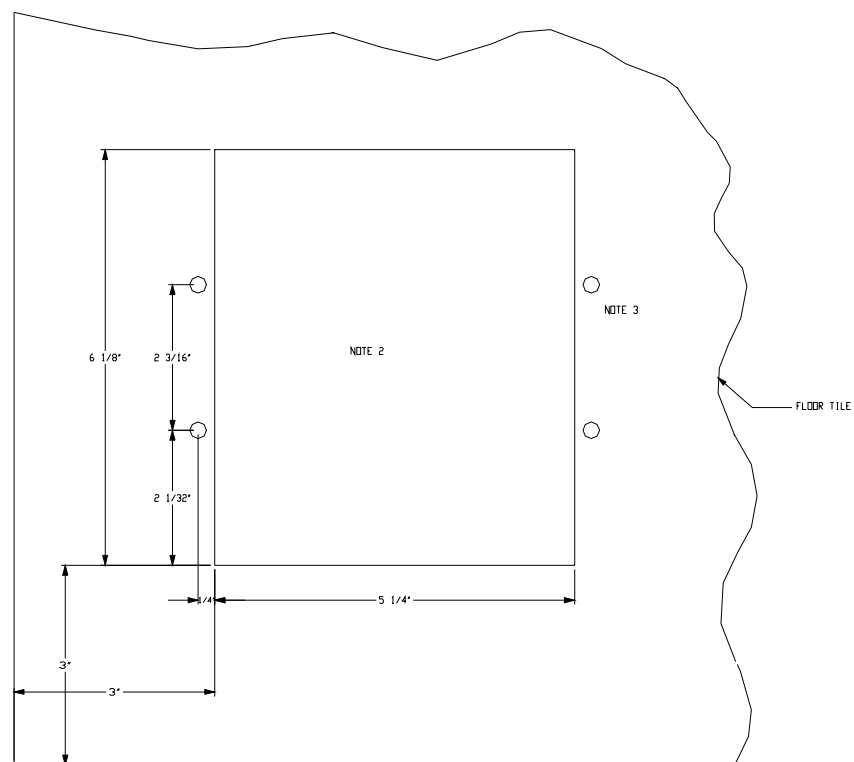


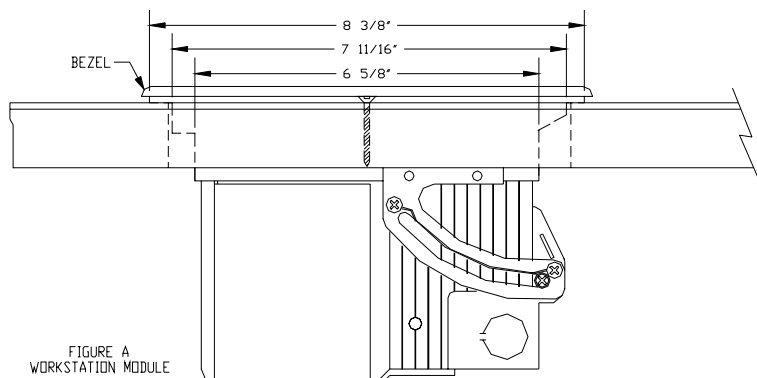
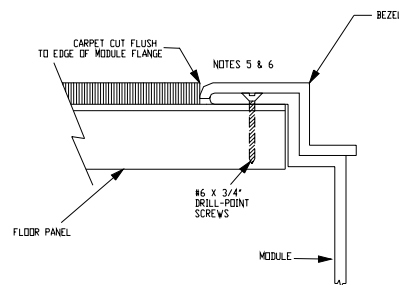
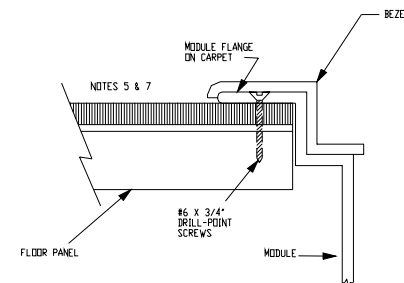
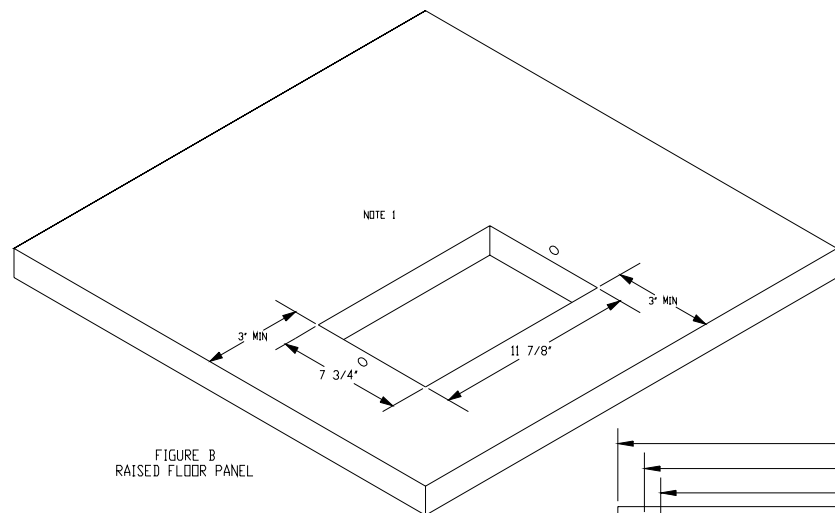
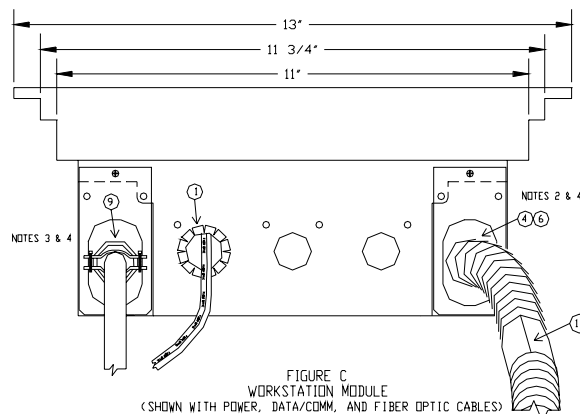
FIGURE B  
RAISED FLOOR PANEL

#### NOTES:

ALL DIMENSIONS ARE IN INCHES (+/- 1/32).

1. THIS BOX IS AN AGENCY PROVIDED ASSEMBLY THAT COMES COMPLETE WITH 20 FEET OF FLEXIBLE CONDUIT.
2. CUT A HOLE IN FLOOR TILE, 6 1/8 X 5 1/4 INCHES, A MINIMUM OF 3 INCHES FROM THE EDGE.
3. DRILL 4 HOLES USING A 1/8 INCH DRILL BIT AS INDICATED.
4. ATTACH BOX TO FLOOR TILE USING AGENCY PROVIDED SCREWS.
5. WHEN SERVICE FITTING IS USED FOR AC POWER, LABEL BEZEL WITH PANEL AND BREAKER INFORMATION USING EMBOSsing TAPE.

U.S. AIR FORCE AIR INTELLIGENCE AGENCY		TITLE Raised Floor Service Fitting Liskey Box	
DRAFTSMAN P. M. Spalenka	CHECKER J. J. Grant	ENGINEER P. M. Spalenka	APPROVER D. Duff
DRAWING CONTROL # 342		SCALE Full	DATE 8 JUL 97
		DRAWING NUMBER 99-16-342	SHEET 4 OF 6

FIGURE A  
WORKSTATION MODULEFIGURE D  
MOUNTING DETAILFIGURE E  
MOUNTING DETAILFIGURE B  
RAISED FLOOR PANELFIGURE C  
WORKSTATION MODULE  
(SHOWN WITH POWER, DATA/COMM, AND FIBER OPTIC CABLES)

## REQUIRED MATERIALS LIST

FIND	LI NO	DESCRIPTION	QTY
1.	0113	GROMMET, #2, WHITE, CONTINUOUS NYLON STRIP	AS REQ
2.	0505	CONDUIT HARDWARE, LOCKNUT FOR CHASE NIPPLE	AS REQ
3.	0507	2B CONDUIT, HARDWARE, CHASE NIPPLE FOR 1/2 INCH	AS REQ
4.	0651	INSULATOR BUSHING, 1/2 INCH	AS REQ
5.	0690	CONTACT ADHESIVE	AS REQ
6.	1241	CONDUIT, BOX CONNECTOR, 1/2 INCH	AS REQ
7.	1340	ACCESS FLOOR WORKSTATION MODULE AMP P/N 557601-4	1
8.	1371	PLATE, SEPARATOR, AMP PN 769068-1	AS REQ
9.	2007	BOX CONN, 1/2 INCH W/ SQUEEZE CLAMP	AS REQ

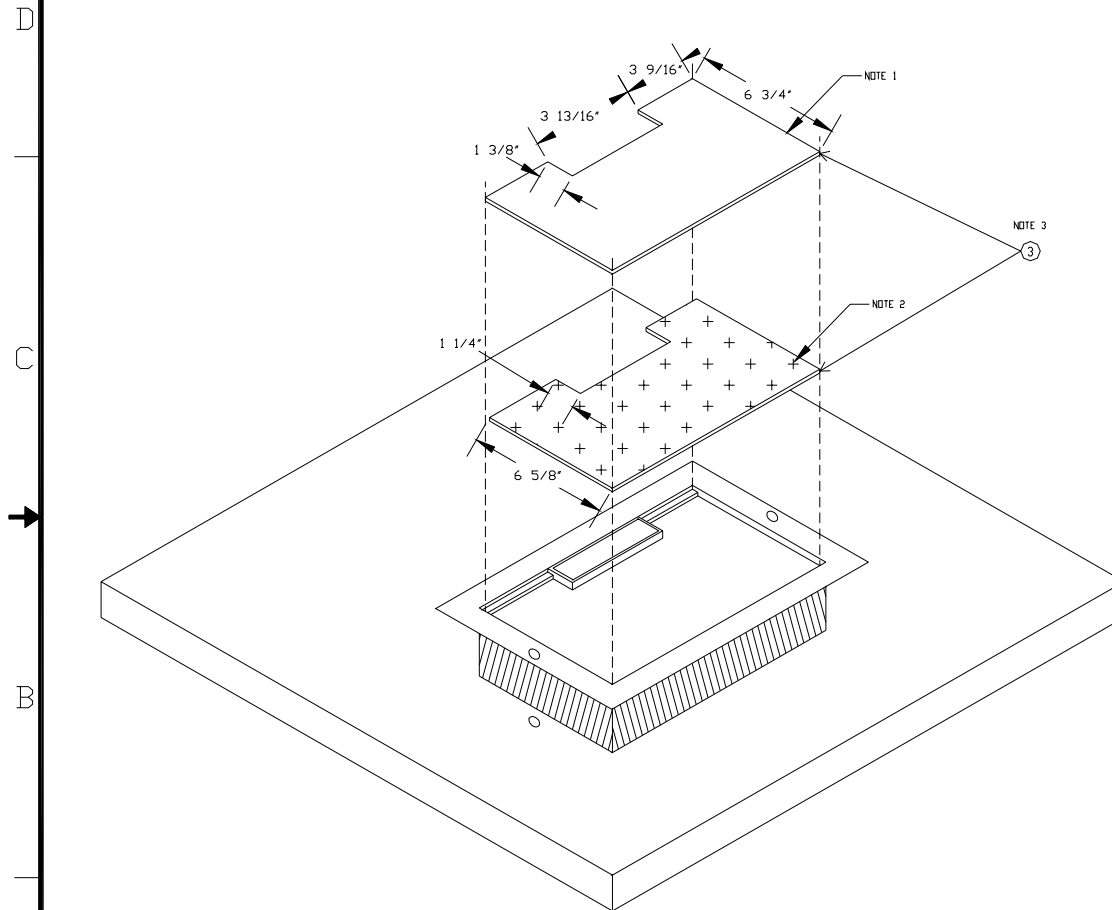
## NOTES:

- CUT OPENING NEAR ONE CORNER OF THE FLOOR PANEL +/- 1/32 IAW FIG. B HOLE MUST BE AT LEAST 3 INCHES FROM ANY EDGE.
- REMOVE THE 1/2 INCH KNOCKOUT. CONNECT THE FLEX CONDUIT USING CONDUIT BOX CONNECTOR (LI 1241) AND INSULATOR (LI 651). SEE FIG. C
- REMOVE THE KNOCKOUT. INSTALL A CHASE NIPPLE (LI'S 505 & 507), STRESS RELIEF CLAMP (LI 2007), OR GROMMET (LI 113). INSTALL DATA/ COMMUNICATION CABLE. SEE FIG. C
- IN ORDER TO ALLOW FREE MOVEMENT OF THE ROTATING COVER, PROPER CARE MUST BE TAKEN IN ROUTING FLEXIBLE CONDUIT AND DATA/ COMMUNICATION CABLES.
- WITH THE COVER RAISED, UNSNAP THE BEZEL BY FIRST PRESSING INWARD AND UP ALONG THE FRONT EDGE. THEN PRESS INWARD AND UP ALONG THE BACK EDGE. SLIP THE BEZEL UP AND OVER THE COVER. LOWER THE MODULE INTO THE FLOOR PANEL CUTOUT, TAKING CARE NOT TO PINCH OR DAMAGE CABLES. PRE-DRILL THE LEFT AND RIGHT END MOUNTING FLANGE ALIGNMENT HOLES USING A 7/64 INCH DRILL BIT. SECURE THE MOUNTING FLANGE TO THE FLOOR PANEL WITH 2 #6 X 3/4 INCH LONG DRILL POINT, SELF TAPPING SCREWS WHICH ARE SUPPLIED. INSTALL THE BEZEL.
- THE MODULE MAY BE MOUNTED WITH THE FLANGE RESTING DIRECTLY AGAINST THE FLOOR PANEL AND THE BEZEL FLUSH WITH THE CARPET. CUT THE CARPET TO FIT SNUGLY AROUND THE EDGES OF THE BEZEL. SEE FIG. D.
- THE MODULE MAY BE MOUNTED WITH THE FLANGE AND BEZEL RESTING ON THE CARPET. SEE FIG. E
- WHEN BOTH POWER AND SIGNAL ARE USED IN THE SAME MODULE A MOVEABLE SEPARATOR PLATE (LI 1371) WILL BE INSTALLED BETWEEN THEM.
- WHEN SERVICE FITTING IS USED FOR AC POWER, LABEL BEZEL WITH PANEL AND BREAKER INFORMATION USING EMBOSSED TAPE.
- LABEL FLEX CONDUIT IAW DWG 99-16-332, SHT 1, NOTE 4.

U.S. AIR FORCE  
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DRAFTSMAN T. M. Headley CHECKER J. Davis ENGINEER J. Davis APPROVED J. Davis DRAWING CONTROL # 342		TITLE Raised Floor Service Fitting Access Floor Workstation Module (AFWM)	
SIZE C	DATE ESTABLISHED 1 Sep 94	DRAWING NUMBER 99-16-342	
SCALE Full	DATE 25 AUG 00	SHEET 5 OF 6	

IP98-004 FABRICATION FOR FLOOR TILE KITS 6 OCT 98 JD P342-6

FIGURE A  
AFWM TILE KIT INSTALLATION

## REQUIRED MATERIALS LIST

FIND	L/I NO	DESCRIPTION	QTY
1.	1431	12\" FLOOR TILE (NOT SHOWN)	AS REQ
2.	1432	CARPET TAPE 1 7/8\" 150' ROLL	AS REQ
3.	1374	TILE KIT, 2 PIECES (LOCAL FABRICATION)	1

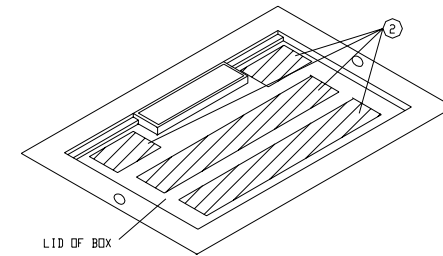


FIGURE B

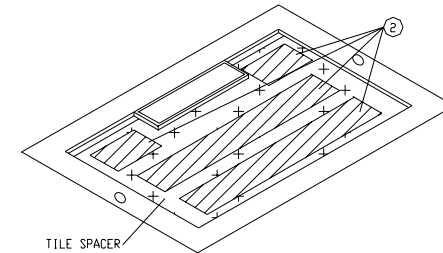


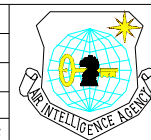
FIGURE C

## NOTES:

1. TRIM L/I 1431 FLOOR TILE OR CARPET TO THE DIMENSION SHOWN IN FIGURE A. THE SECTION OF CARPET REMOVED WHEN CUTTING THE FLOOR OPENING CAN BE TRIMMED AND RE-USED ON-SITE.
2. TRIM L/I 1431 FLOOR TILE TO THE DIMENSIONS SHOWN IN FIGURE A. THIS PIECE IS SMALLER AND USED AS A TILE SPACER.
3. THE UPPER FLOOR TILE AND SPACER ARE FABRICATED LOCALLY AS A KIT L/I 1374.
4. USE CARPET TAPE L/I 1432 TO ATTACH THE TILE SPACER TO THE LID AND FLOOR TILE TO THE TILE SPACER.

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DRAWN BY  
P. M. Spalenka  
CHECKED  
J. Davis  
ENGINEER  
P. M. Spalenka  
APPROVED  
J. Davis  
DRAWING CONTROL # 342



TITLE  
Raised Floor  
Service Fitting  
Access Floor Workstation  
Module (AFWM)  
SIZE  
C  
DATE ESTABLISHED  
2 APR 98  
DRAWING NUMBER  
99-16-342  
SCALE  
Full  
DATE  
6 OCT 98  
SHEET 6 OF 6

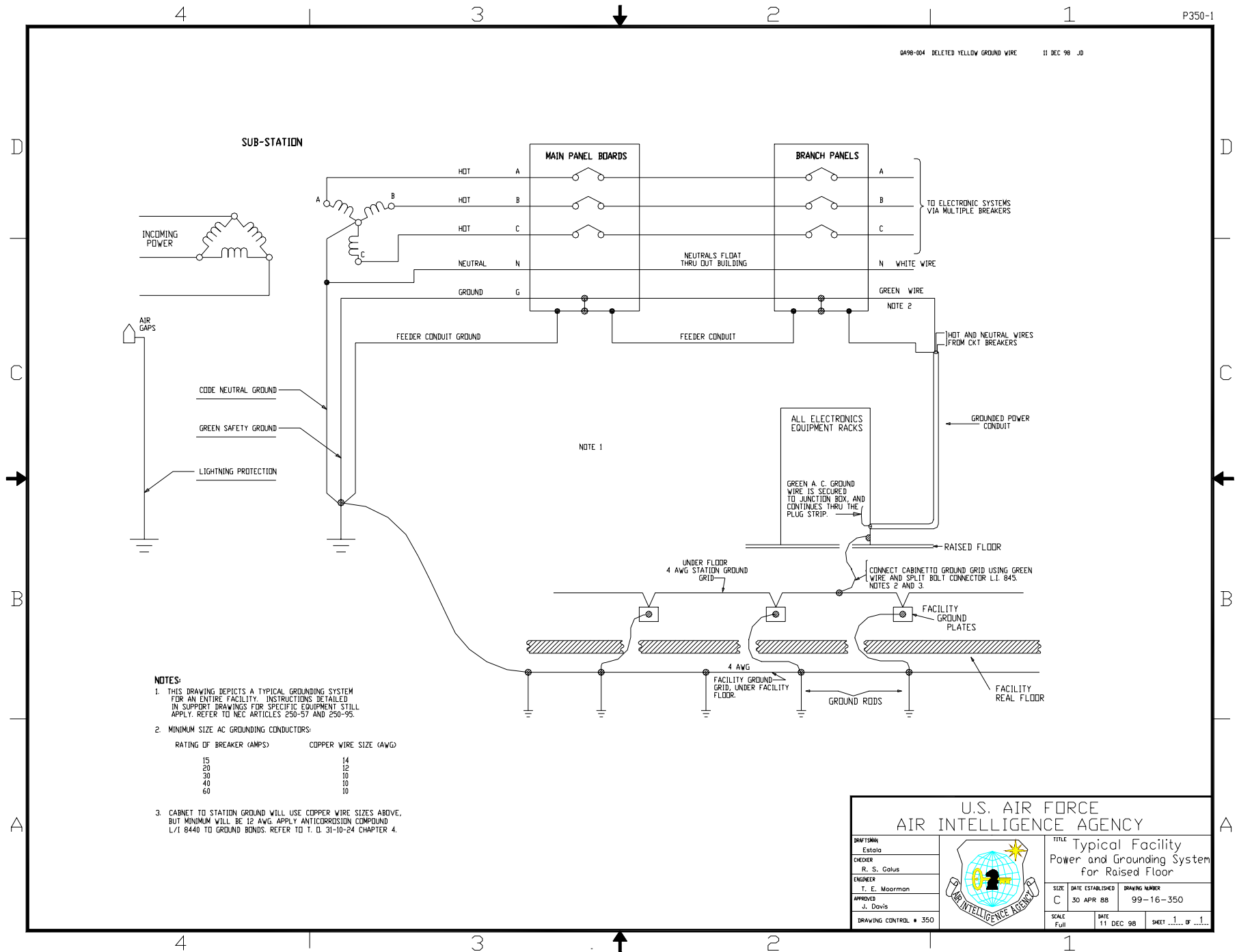




FIG 1

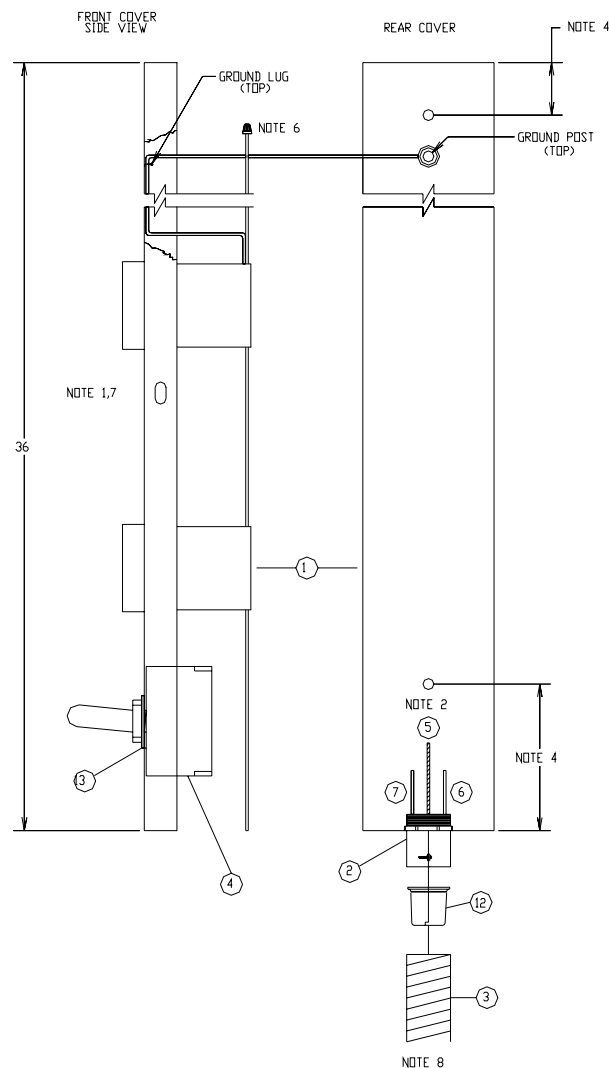
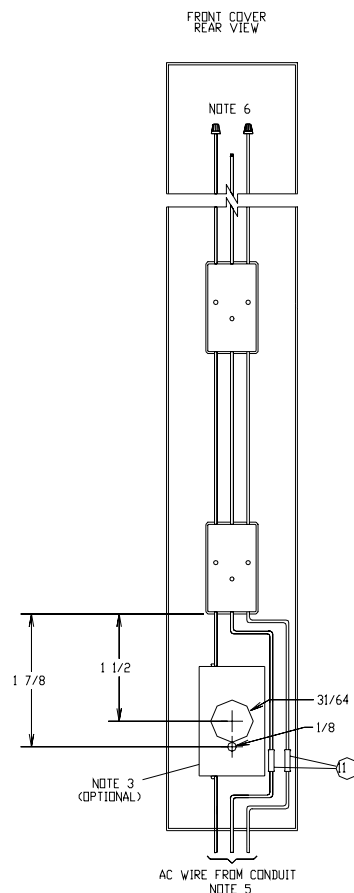


FIG 2



CHANGED NOTE 3 MAKING TOGGLE SWITCH OPTIONAL. 27 APR 95 PMS  
 DA97-001 CHANGE NOTE 5 AND RML FIND ITEM 11. 25 MAR 97 TMH  
 CHANGED NOTE 8. 7 APR 98 PMS  
 MOVED FROM CAT 13 (4-327). 1 APR 99 JD

## NOTES: ALL DIMENSIONS IN INCHES (PLUS/MINUS 1/32")

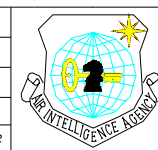
1. SEPARATE TOP AND REAR COVERS BY REMOVING THE FOUR SIDE SCREWS.
2. REMOVE GROUND WIRE FROM BOTTOM GROUND LUG AND POST, (CUT AT GROUND LUG). REMOVE BOTTOM GROUND POST AND LUG.
3. DRILL ONE 1/8 INCH HOLE 1 7/8 INCHES FROM BOTTOM OF THE FIRST OUTLET. DRILL ONE 31/64 INCH HOLE 1 1/2 INCHES FROM BOTTOM OF THE FIRST OUTLET. MOUNT SWITCH (LI-993) AND LOCKING WASHER (LI-562) AS SHOWN IN FIG. 1. THIS SWITCH IS OPTIONAL. DO NOT DRILL HOLES IF SCHEME DOES NOT CALL FOR IT.
4. TO SECURE PLUG-STRIP TO THE RACK (TOP AND MIDDLE FRAME STRUT), DRILL TWO #9 HOLES IN THE REAR COVER AS FOLLOWS: FOR XFR317019 (LI-3038) AND XFR317024 (LI-3043) RACKS DRILL ONE HOLE, 1 3/8 INCHES FROM EACH END (TOP AND BOTTOM). FOR XFR317819 (LI-62) DRILL THE MOUNTING HOLE 1 1/8 INCHES FROM EACH END, FOR XFR314919 (LI-3060) DRILL TOP HOLE 1 3/8 INCHES FROM END AND BOTTOM 11 7/8 FROM END. SEE FIG. 1. SEE SHEET 1 FOR PLACEMENT IN THE RACK.
5. INSTALLING FLEX TO PLUG STRIP (SEE FIG. 2).  
 (A) REMOVE BOTTOM KNOCKOUT.  
 (B) INSTALL 1/2" BOX CONNECTOR (LI-1241), INSULATOR BUSHING (LI-651) AND FLEX (LI-1240) TO PLUG-STRIP.  
 (C) CONNECT INCOMING GROUND (GREEN) WIRE TO GROUND WIRE OF THE PLUG-STRIP WITH SPlice CONNECTOR (LI-6166). INSULATE BARE WIRE ON PLUG-STRIP TO PREVENT SHORTING.  
 (D) CONNECT INCOMING WHITE TO PLUG-STRIP WHITE WIRE WITH SPlice CONNECTOR (LI-6166).  
 (E) CONNECT PLUG-STRIP BLACK WIRE TO TOP LEFT TERMINAL (REAR VIEW) OF SWITCH.  
 (F) CONNECT INCOMING BLACK WIRE TO BOTTOM LEFT TERMINAL (REAR VIEW) OF SWITCH.
6. CAP BLACK AND WHITE WIRES WITH WIRE NUTS (PROVIDED) TO PREVENT SHORTING.
7. REASSEMBLE PLUG-STRIP USING ORIGINAL SCREWS.
8. ANCHOR FLEX TO RACK (AW DWG 99-13-288, SHEET 1 OF 4).

## REQUIRED MATERIALS LIST

FIND ITEM	LINE ITEM	QTY.	DESCRIPTION	REMARKS
1.	437	1 EA	PLUG STRIP	
2.	1241	1 EA	BOX CONN. FOR 1/2" FLEX	
3.	1240	AS REQ.	1/2" FLEX	
4.	993	1 EA	SWITCH, TOGGLE	
5.	868	AS REQ.	12 AWG. GREEN WIRE	
6.	877	AS REQ.	12 AWG. WHITE WIRE	
7.	876	AS REQ.	12 AWG. BLACK WIRE	
8.	27	AS REQ.	10-32 X 1/2" SCREWS	NOT SHOWN
9.	149	AS REQ.	TIE BUCKLES	NOT SHOWN
10.	132	AS REQ.	TIE WRAPS	NOT SHOWN
11.	6166	2 EA	SPlice CONNECTOR	
12.	651	1 EA	INSULATOR BUSHING	
13.	562	1 EA	LOCKING WASHER	
14.	63	AS REQ.	CLIP NUTS (EMCOR RACKS)	NOT SHOWN NOTE 4

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F. W. Wood  
APPROVED  
D. Duff  
DRAWING CONTROL # 352



TITLE Raised Floor  
Power Detail - Plug Strip  
Installation in General

SIZE DATE ESTABLISHED DRAWING NUMBER  
C 13 FEB 87 99-16-352

SCALE DATE SHEET  
Full 1 APR 99 1... of 1...